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Yamada

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(54) **JOB MANAGEMENT AND CONTROL FOR AN IMAGE FORMING APPARATUS**

(71) Applicant: **CANON KABUSHIKI KAISHA**, Tokyo (JP)

(72) Inventor: **Masayuki Yamada**, Yokohama (JP)

(73) Assignee: **Canon Kabushiki Kaisha**, Tokyo (JP)

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(51) **Int. Cl.**
H04N 1/00 (2006.01)
G06F 3/12 (2006.01)

(52) **U.S. Cl.**
CPC ***H04N 1/00925*** (2013.01); ***G06F 3/1205*** (2013.01); ***G06F 3/1259*** (2013.01); ***G06F 3/1273*** (2013.01); ***G06F 3/1274*** (2013.01); ***H04N 1/00384*** (2013.01); ***H04N 1/00413*** (2013.01); ***H04N 1/00474*** (2013.01); ***H04N 1/00477*** (2013.01)

(58) **Field of Classification Search**
CPC H04N 1/00474; H04N 1/00925; H04N 1/00413; H04N 1/00384; H04N 1/00477; G06F 3/1259; G06F 3/1273; G06F 3/1274; G06F 3/1205
See application file for complete search history.

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Primary Examiner — Nicholas Pachol
(74) *Attorney, Agent, or Firm* — Canon U.S.A., Inc., IP Division

(57) **ABSTRACT**

An image, processing apparatus includes a reading unit configured to read an original, a transmission unit configured to transmit image data to an external apparatus, a printing unit configured to print an image, a display unit configured to display the image, and a control unit configured to suspend a job executed by the printing unit in response to a selection of a key for suspending a currently executed job display a list of jobs on the display unit, and cancel a job selected by a user from the displayed list of the jobs. The control unit displays a list of transmission jobs for the transmission unit to transmit the image data generated when the reading unit reads the original in response to the selection of the key during display of a main menu screen for accepting a selection of a function to be used.

17 Claims, 23 Drawing Sheets

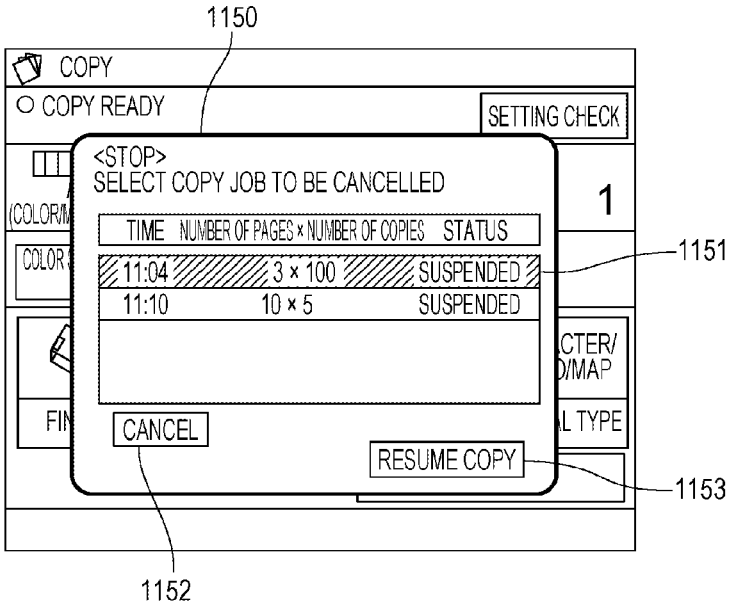

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FIG. 1

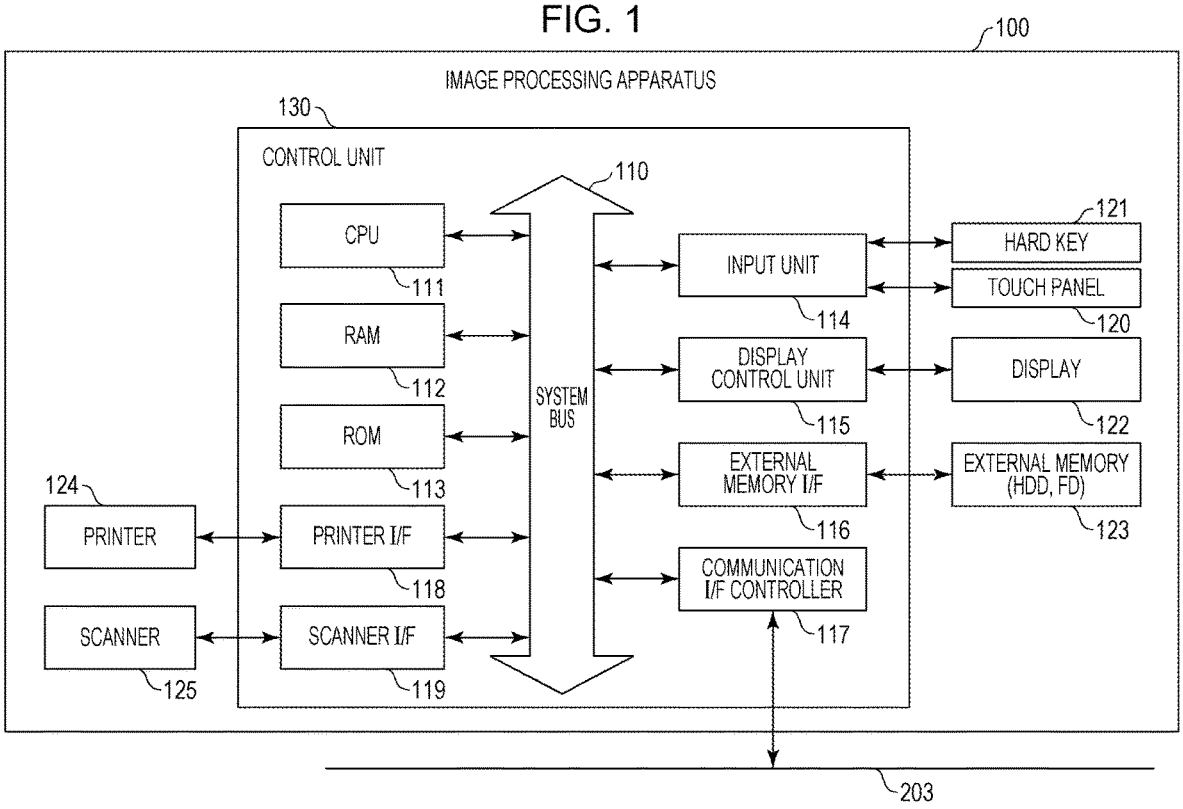
100
IMAGE PROCESSING APPARATUS
130
CONTROL UNIT
110
CPU
111
RAM
112
ROM
113
SYSTEM BUS
INPUT UNIT
114
DISPLAY CONTROL UNIT
115
EXTERNAL MEMORY I/F
116
COMMUNICATION I/F CONTROLLER
117
121
HARD KEY
TOUCH PANEL
120
DISPLAY
122
EXTERNAL MEMORY (HDD, FD)
123
124
PRINTER
PRINTER I/F
118
SCANNER
SCANNER I/F
119
125
203

FIG. 2

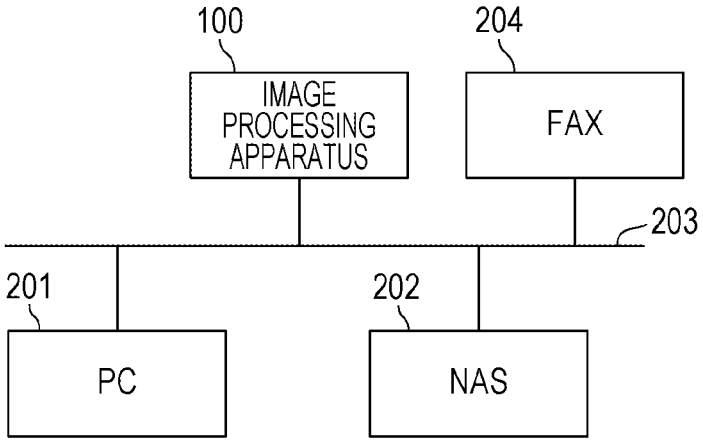
100
204
IMAGE PROCESSING APPARATUS
FAX
203
201
202
PC
NAS

FIG. 3

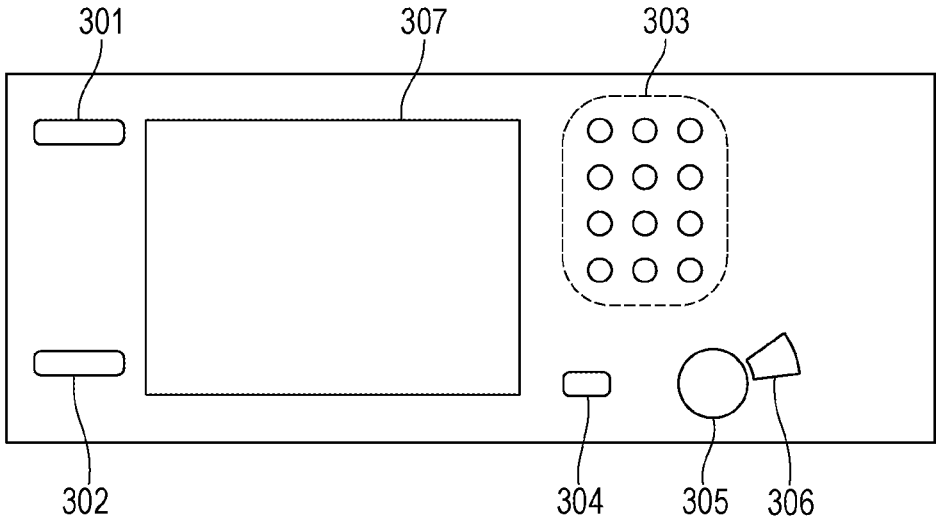
301
307
303
302
304
305
306

FIG. 4

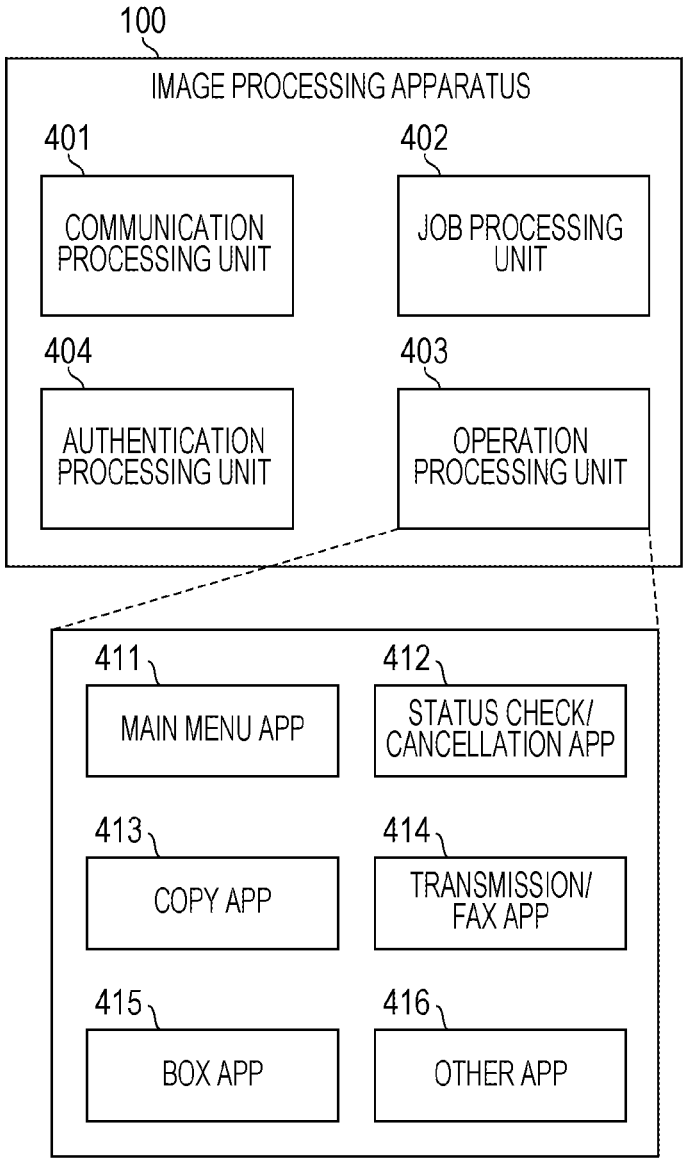
100
IMAGE PROCESSING APPARATUS
401
COMMUNICATION PROCESSING UNIT
402
JOB PROCESSING UNIT
404
AUTHENTICATION PROCESSING UNIT
403
OPERATION PROCESSING UNIT
411
MAIN MENU APP
412
STATUS CHECK/ CANCELLATION APP
413
COPY APP
414
TRANSMISSION/ FAX APP
415
BOX APP
416
OTHER APP

FIG. 5

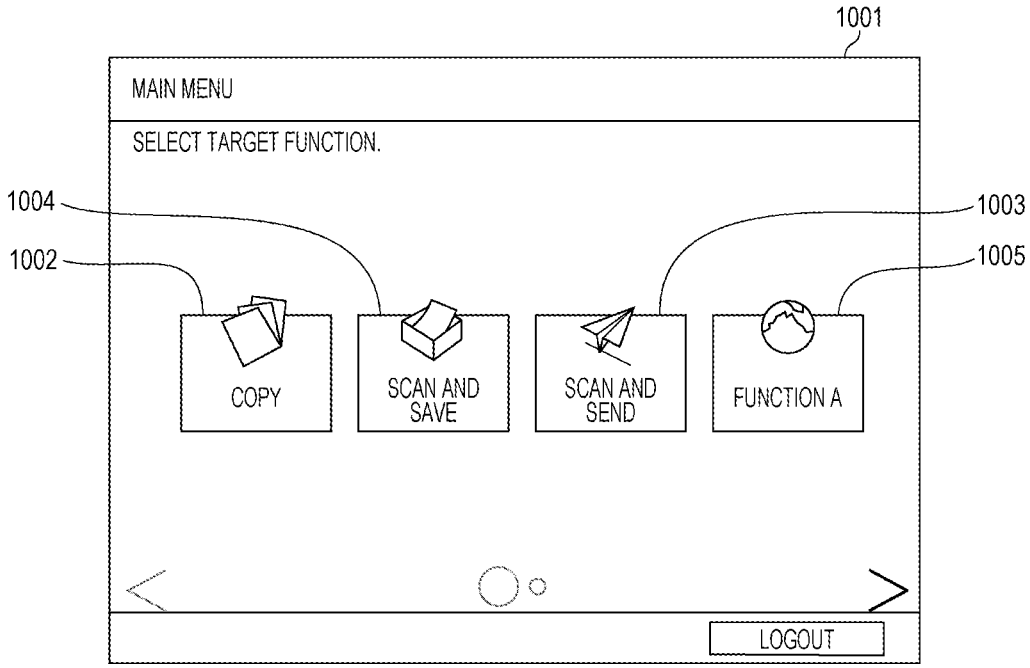
1001
MAIN MENU
SELECT TARGET FUNCTION.
1004
1003
1002
1005
COPY
SCAN AND SAVE
SCAN AND SEND
FUNCTION A
LOGOUT

FIG. 6

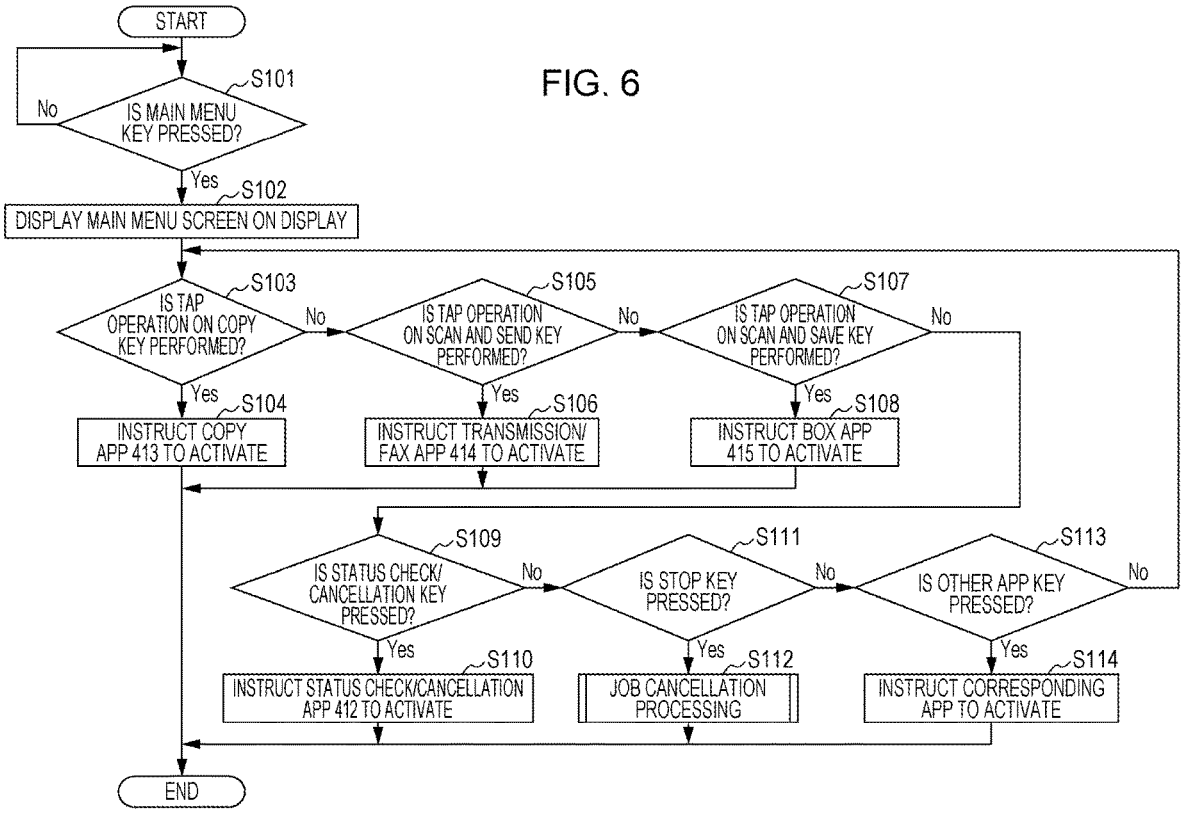
START
S101
IS MAIN MENU KEY PRESSED?
No
Yes
S102
DISPLAY MAIN MENU SCREEN ON DISPLAY
S103
IS TAP OPERATION ON COPY KEY PERFORMED?
No
Yes
S104
INSTRUCT COPY APP 413 TO ACTIVATE
S105
IS TAP OPERATION ON SCAN AND SEND KEY PERFORMED?
No
Yes
S106
INSTRUCT TRANSMISSION/ FAX APP 414 TO ACTIVATE
S107
IS TAP OPERATION ON SCAN AND SAVE KEY PERFORMED?
No
Yes
S108
INSTRUCT BOX APP 415 TO ACTIVATE
S109
IS STATUS CHECK/ CANCELLATION KEY PRESSED?
No
Yes
S110
INSTRUCT STATUS CHECK/CANCELLATION APP 412 TO ACTIVATE
S111
IS STOP KEY PRESSED?
No
Yes
S112
JOB CANCELLATION PROCESSING
S113
IS OTHER APP KEY PRESSED?
No
Yes
S114
INSTRUCT CORRESPONDING APP TO ACTIVATE
END

FIG. 7A

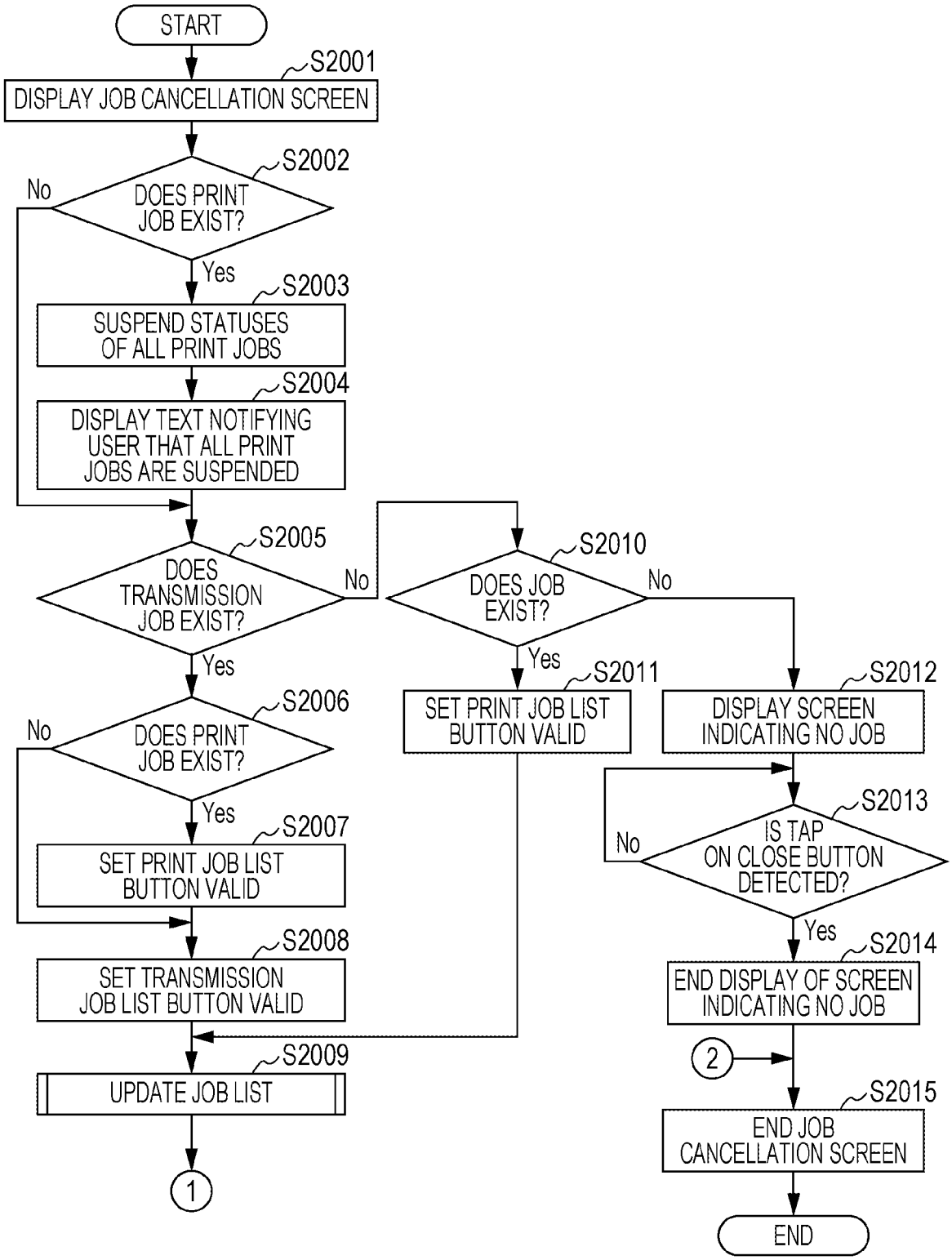
START
S2001
DISPLAY JOB CANCELLATION SCREEN
S2002
DOES PRINT JOB EXIST?
No
Yes
S2003
SUSPEND STATUSES OF ALL PRINT JOBS
S2004
DISPLAY TEXT NOTIFYING USER THAT ALL PRINT JOBS ARE SUSPENDED
S2005
DOES TRANSMISSION JOB EXIST?
No
Yes
S2006
DOES PRINT JOB EXIST?
No
Yes
S2007
SET PRINT JOB LIST BUTTON VALID
S2008
SET TRANSMISSION JOB LIST BUTTON VALID
S2009
UPDATE JOB LIST
1
S2010
DOES JOB EXIST?
No
Yes
S2011
SET PRINT JOB LIST BUTTON VALID
S2012
DISPLAY SCREEN INDICATING NO JOB
S2013
IS TAP ON CLOSE BUTTON DETECTED?
No
Yes
S2014
END DISPLAY OF SCREEN INDICATING NO JOB
2
S2015
END JOB CANCELLATION SCREEN
END

FIG. 7B

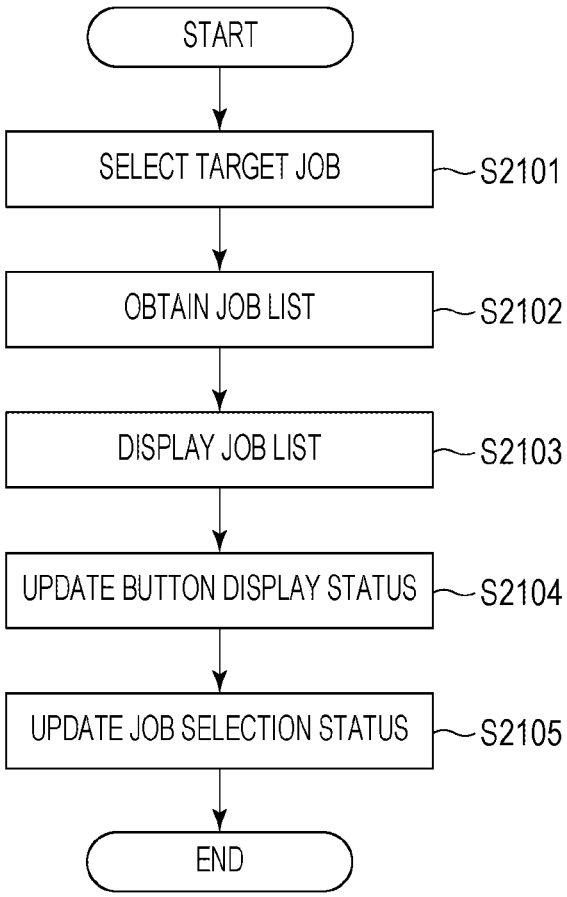
START
SELECT TARGET JOB
S2101
OBTAIN JOB LIST
S2102
DISPLAY JOB LIST
S2103
UPDATE BUTTON DISPLAY STATUS
S2104
UPDATE JOB SELECTION STATUS
S2105
END

FIG. 7C

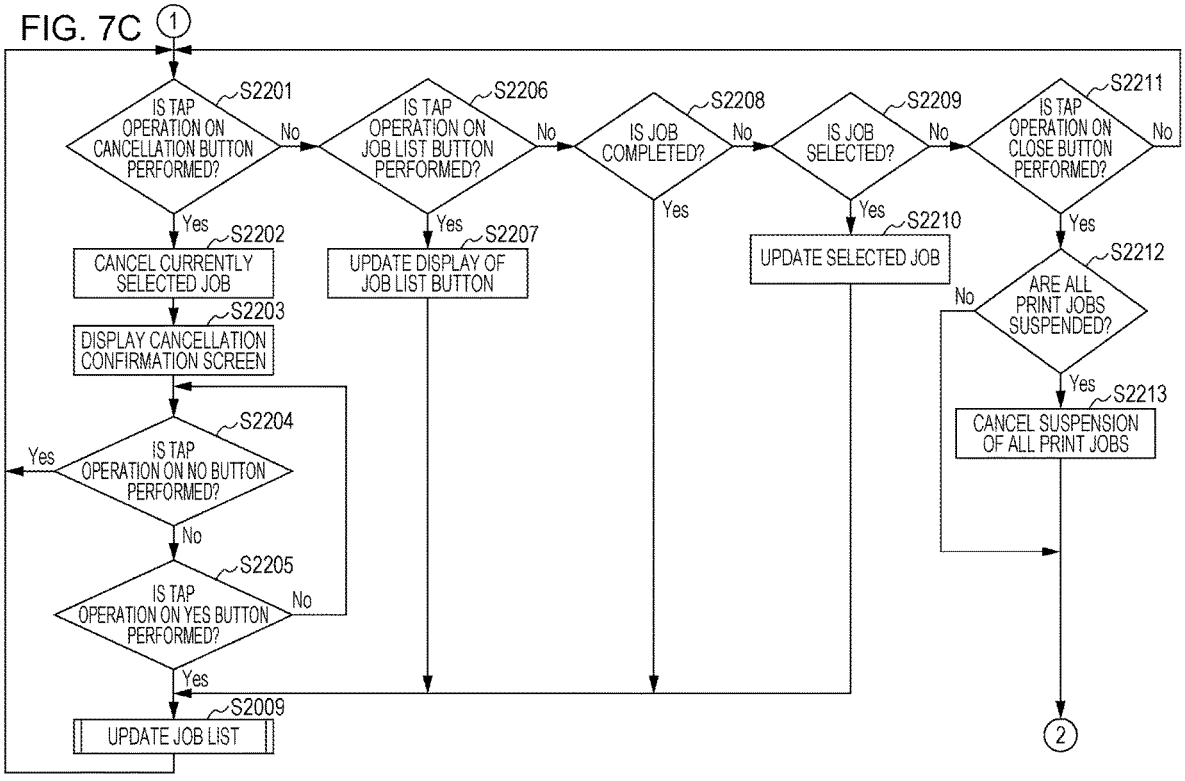
1
S2201
IS TAP OPERATION ON CANCELLATION BUTTON PERFORMED?
No
Yes
S2202
CANCEL CURRENTLY SELECTED JOB
S2203
DISPLAY CANCELLATION CONFIRMATION SCREEN
S2204
IS TAP OPERATION ON NO BUTTON PERFORMED?
Yes
No
S2205
IS TAP OPERATION ON YES BUTTON PERFORMED?
No
Yes
S2009
UPDATE JOB LIST
S2206
IS TAP OPERATION ON JOB LIST BUTTON PERFORMED?
No
Yes
S2207
UPDATE DISPLAY OF JOB LIST BUTTON
S2208
IS JOB COMPLETED?
No
Yes
S2209
IS JOB SELECTED?
No
Yes
S2210
UPDATE SELECTED JOB
S2211
IS TAP OPERATION ON CLOSE BUTTON PERFORMED?
No
Yes
S2212
ARE ALL PRINT JOBS SUSPENDED?
No
Yes
S2213
CANCEL SUSPENSION OF ALL PRINT JOBS
2

FIG. 8A

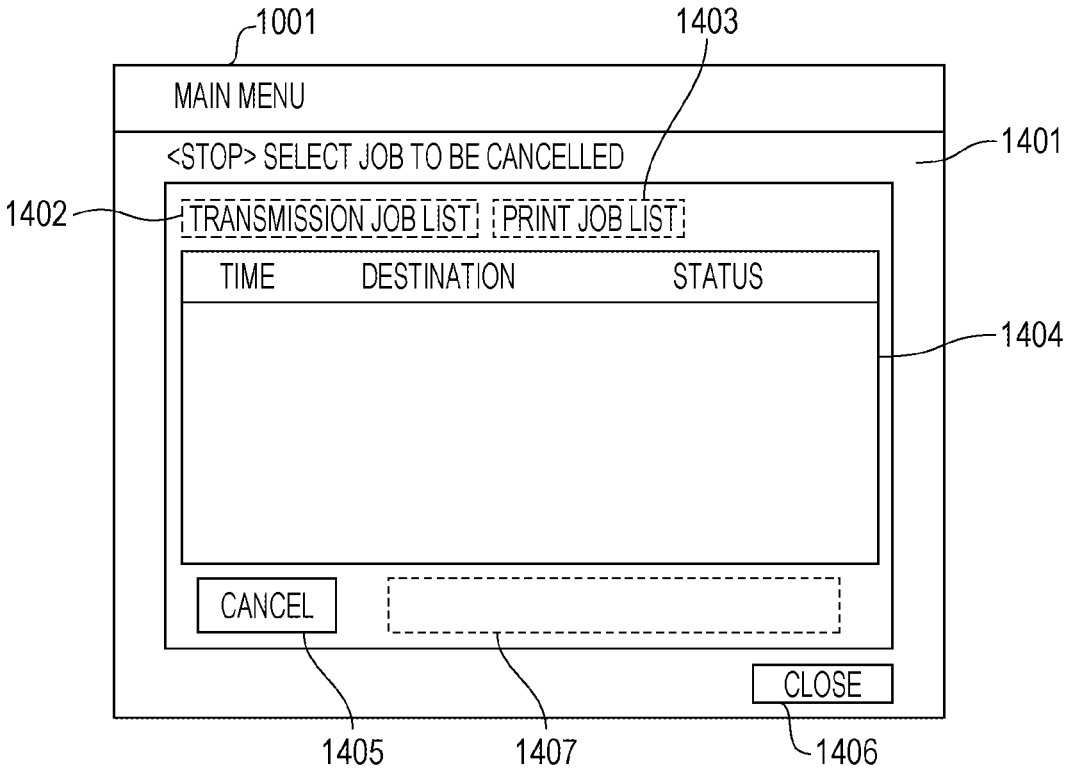
1001
1403
MAIN MENU
<STOP> SELECT JOB TO BE CANCELLED
1401
1402
TRANSMISSION JOB LIST
PRINT JOB LIST
TIME
DESTINATION
STATUS
1404
CANCEL
CLOSE
1405
1407
1406

FIG. 8B

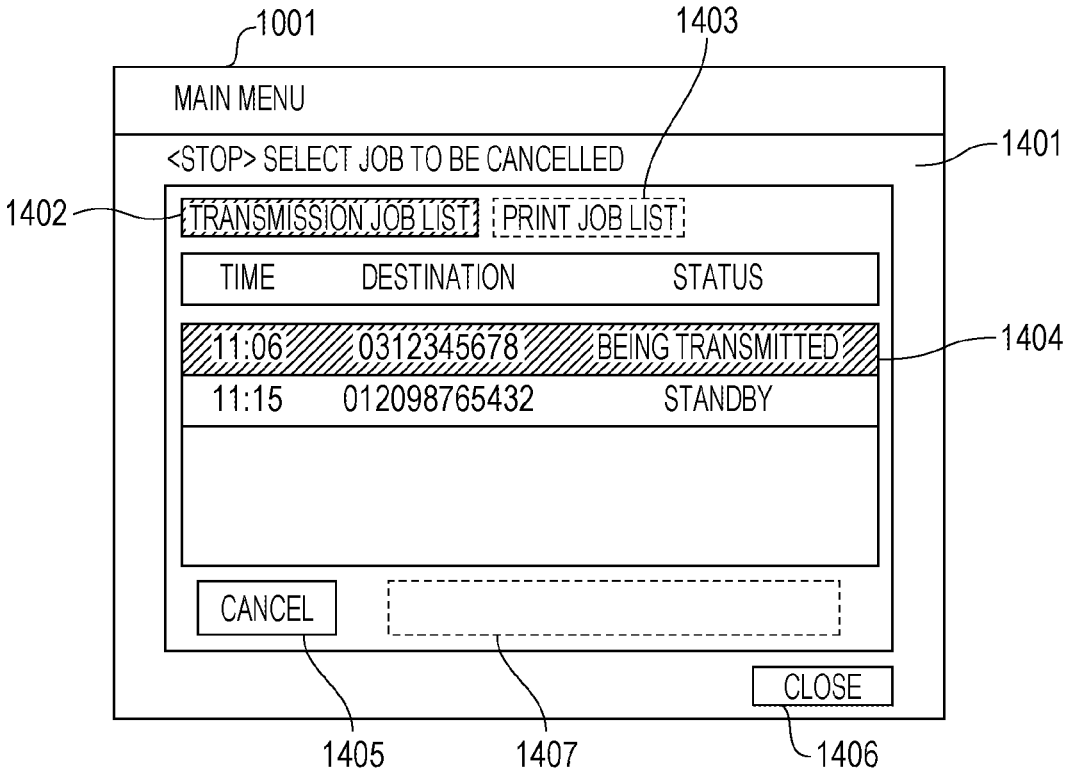
1001
1403
MAIN MENU
<STOP> SELECT JOB TO BE CANCELLED
1401
1402
TRANSMISSION JOB LIST
PRINT JOB LIST
TIME
DESTINATION
STATUS
11:06
0312345678
BEING TRANSMITTED
1404
11:15
012098765432
STANDBY
CANCEL
CLOSE
1405
1407
1406

FIG. 8C

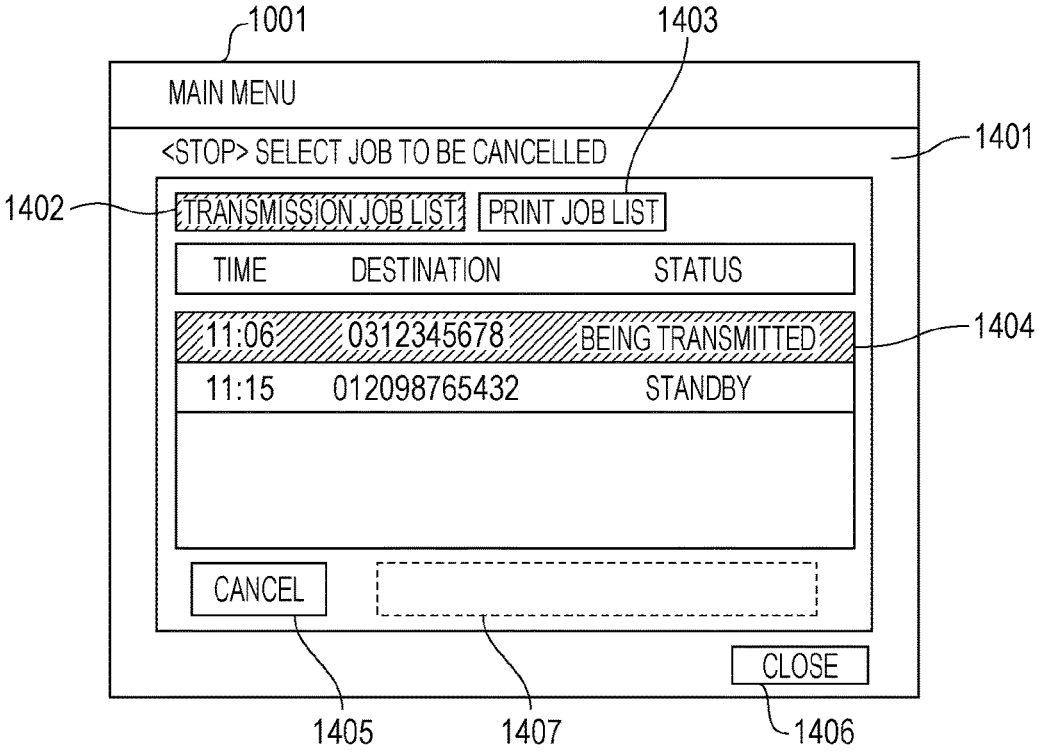
1001
1403
MAIN MENU
<STOP> SELECT JOB TO BE CANCELLED
1401
1402
TRANSMISSION JOB LIST
PRINT JOB LIST
TIME DESTINATION STATUS
11:06 0312345678 BEING TRANSMITTED
1404
11:15 012098765432 STANDBY
CANCEL
CLOSE
1405
1407
1406

FIG. 8D

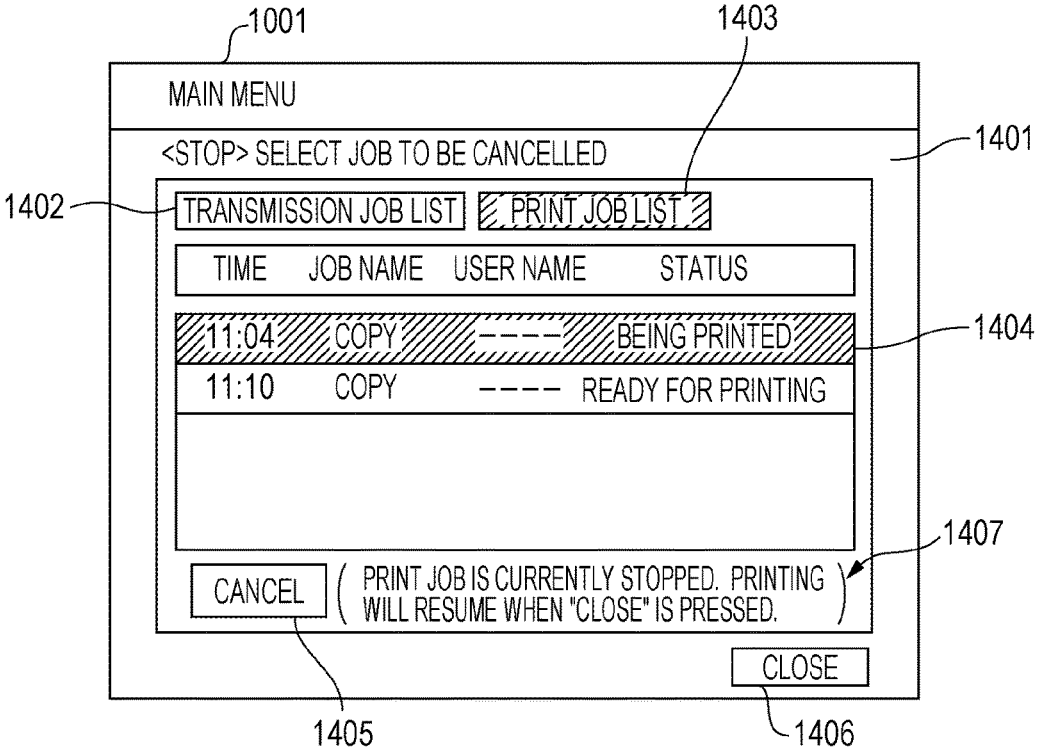
1001
1403
MAIN MENU
<STOP> SELECT JOB TO BE CANCELLED
1401
1402
TRANSMISSION JOB LIST
PRINT JOB LIST
TIME JOB NAME USER NAME STATUS
11:04 COPY ---- BEING PRINTED
1404
11:10 COPY ---- READY FOR PRINTING
1407
CANCEL
PRINT JOB IS CURRENTLY STOPPED. PRINTING WILL RESUME WHEN "CLOSE" IS PRESSED.
CLOSE
1405
1406

FIG. 8E

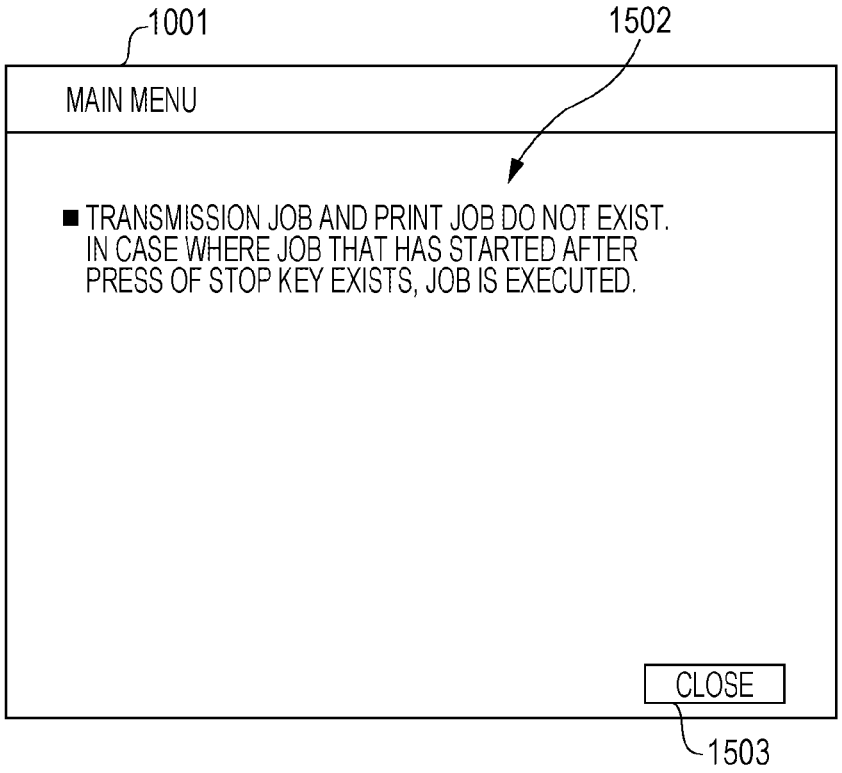
1001
1502
MAIN MENU
■ TRANSMISSION JOB AND PRINT JOB DO NOT EXIST.
IN CASE WHERE JOB THAT HAS STARTED AFTER
PRESS OF STOP KEY EXISTS, JOB IS EXECUTED.
CLOSE
1503

FIG. 8F

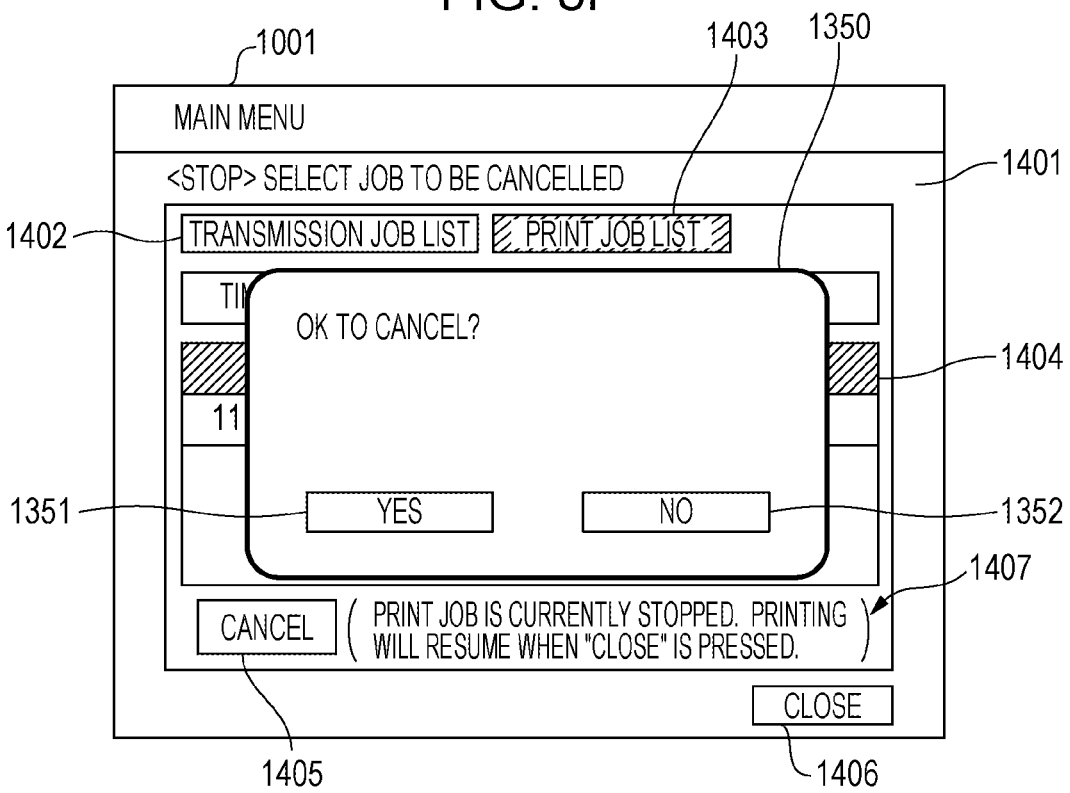
1001
1403
1350
MAIN MENU
<STOP> SELECT JOB TO BE CANCELLED
1401
1402
TRANSMISSION JOB LIST
PRINT JOB LIST
OK TO CANCEL?
1404
1351
YES
NO
1352
1407
CANCEL
PRINT JOB IS CURRENTLY STOPPED. PRINTING
WILL RESUME WHEN "CLOSE" IS PRESSED.
CLOSE
1405
1406

FIG. 9A

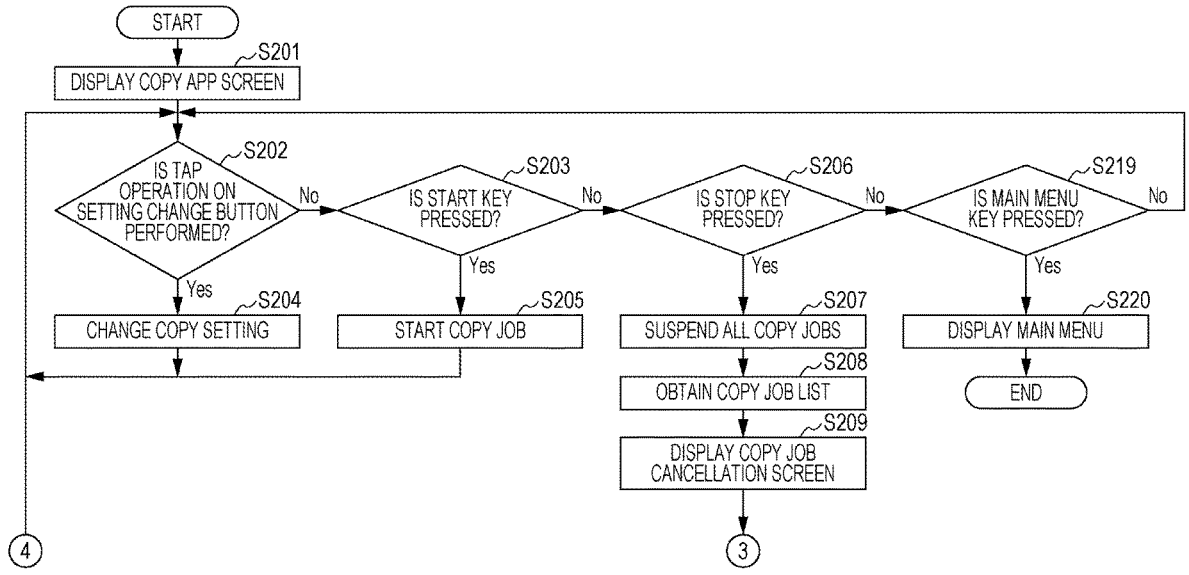
START
S201
DISPLAY COPY APP SCREEN
S202
IS TAP OPERATION ON SETTING CHANGE BUTTON PERFORMED?
No
Yes
S203
IS START KEY PRESSED?
No
Yes
S206
IS STOP KEY PRESSED?
No
Yes
S219
IS MAIN MENU KEY PRESSED?
No
Yes
S204
CHANGE COPY SETTING
S205
START COPY JOB
S207
SUSPEND ALL COPY JOBS
S208
OBTAIN COPY JOB LIST
S209
DISPLAY COPY JOB CANCELLATION SCREEN
S220
DISPLAY MAIN MENU
END
4
3

FIG. 9B

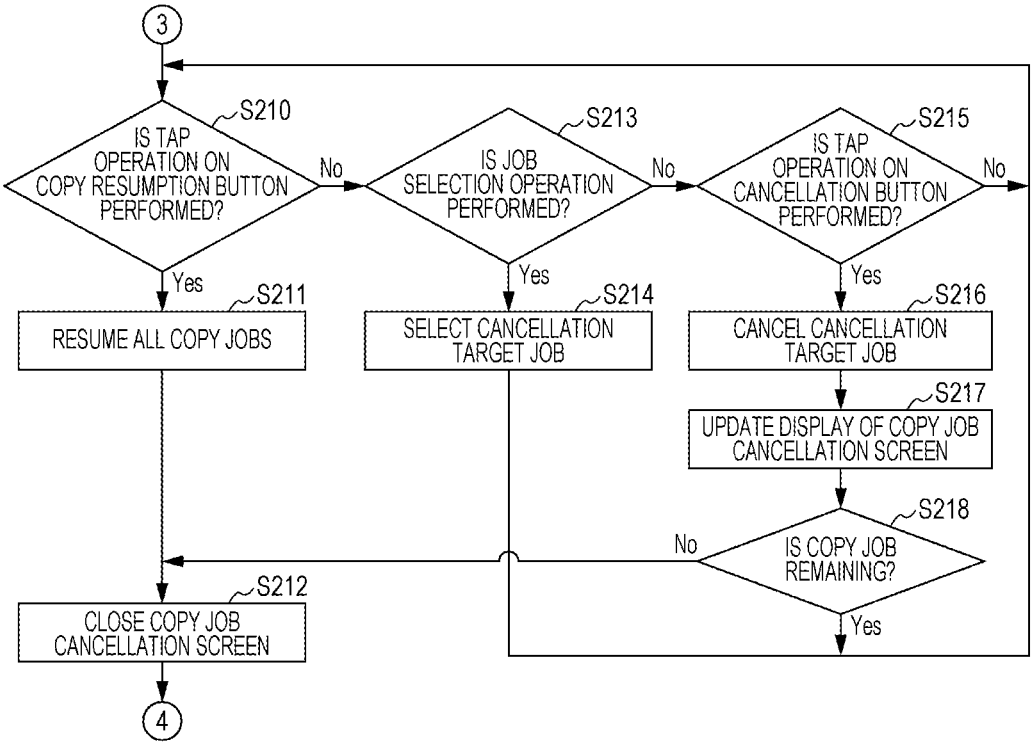
3
S210
IS TAP OPERATION ON COPY RESUMPTION BUTTON PERFORMED?
No
S213
IS JOB SELECTION OPERATION PERFORMED?
No
S215
IS TAP OPERATION ON CANCELLATION BUTTON PERFORMED?
No
Yes
S211
RESUME ALL COPY JOBS
Yes
S214
SELECT CANCELLATION TARGET JOB
Yes
S216
CANCEL CANCELLATION TARGET JOB
S217
UPDATE DISPLAY OF COPY JOB CANCELLATION SCREEN
S218
IS COPY JOB REMAINING?
No
Yes
S212
CLOSE COPY JOB CANCELLATION SCREEN
4

FIG. 10A

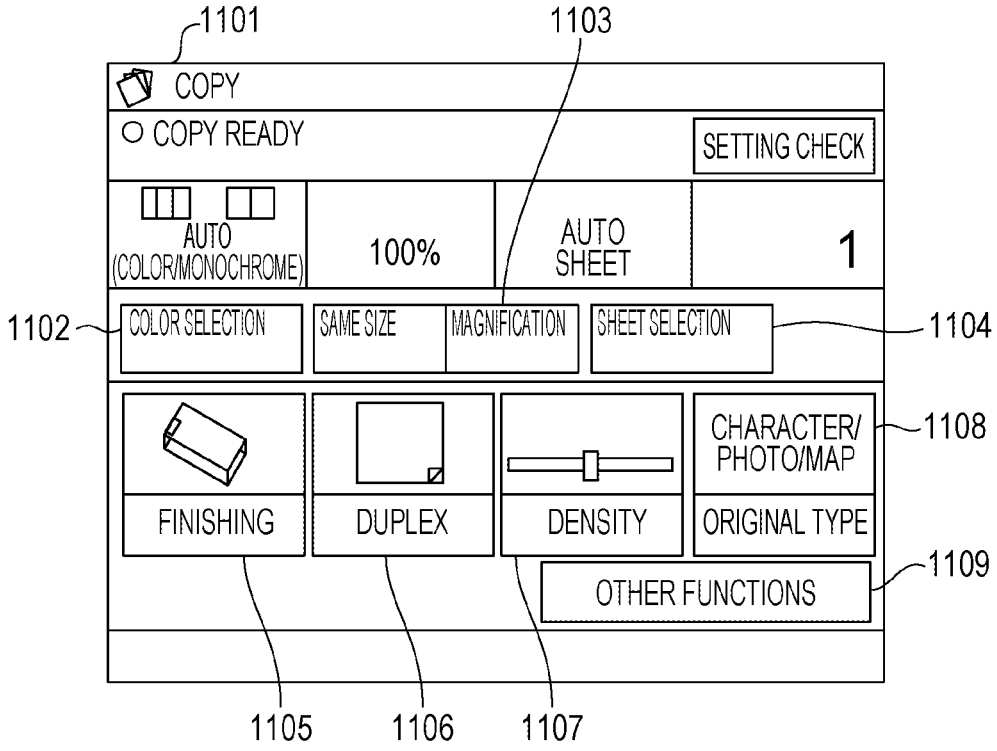

FIG. 10B

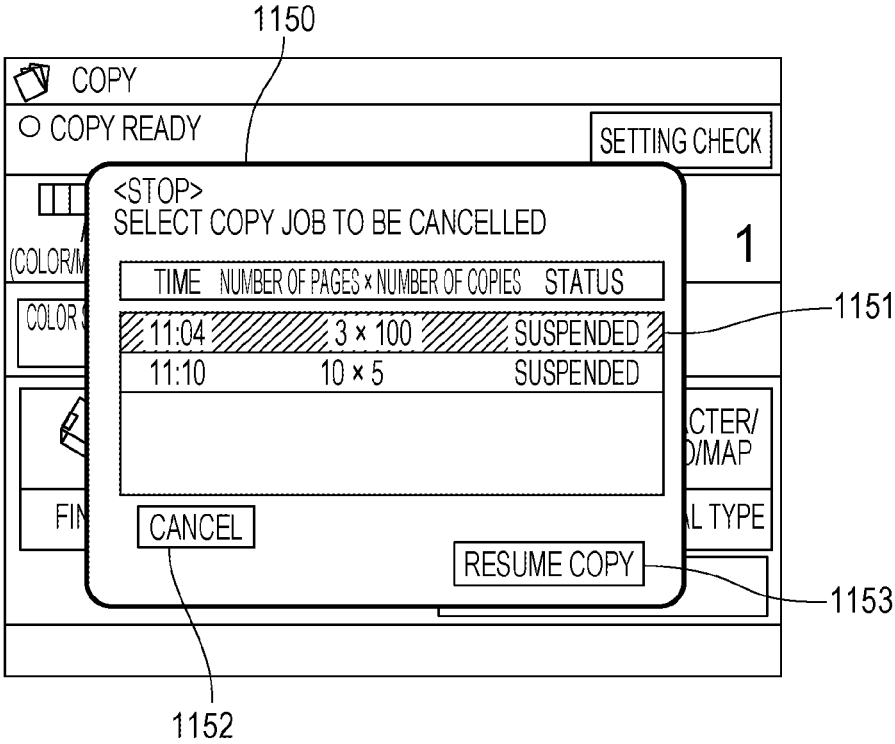

FIG. 11A

JOB ID	ACCEPTED TIME	NUMBER OF PAGES	NUMBER OF COPIES	STATUS
5	11:04:20	3	100	SUSPENDED
6	11:10:03	10	5	SUSPENDED

FIG. 11B

JOB ID	ACCEPTED TIME	DESTINATION	STATUS
12	13:20:10	0312345678	BEING TRANSMITTED
14	13:21:30	abc@def.ghi.jp	STANDBY

FIG. 11C

JOB ID	JOB NAME	ACCEPTED TIME	USER NAME	NUMBER OF PAGES	NUMBER OF COPIES	STATUS	WAITING TIME
5	COPY	11:04:20	-----	3	100	SUSPENDED	3
6	COPY	11:10:03	-----	10	5	SUSPENDED	10
7	xxx.doc	11:11:23	xyz	20	1	SUSPENDED	10

FIG. 12A

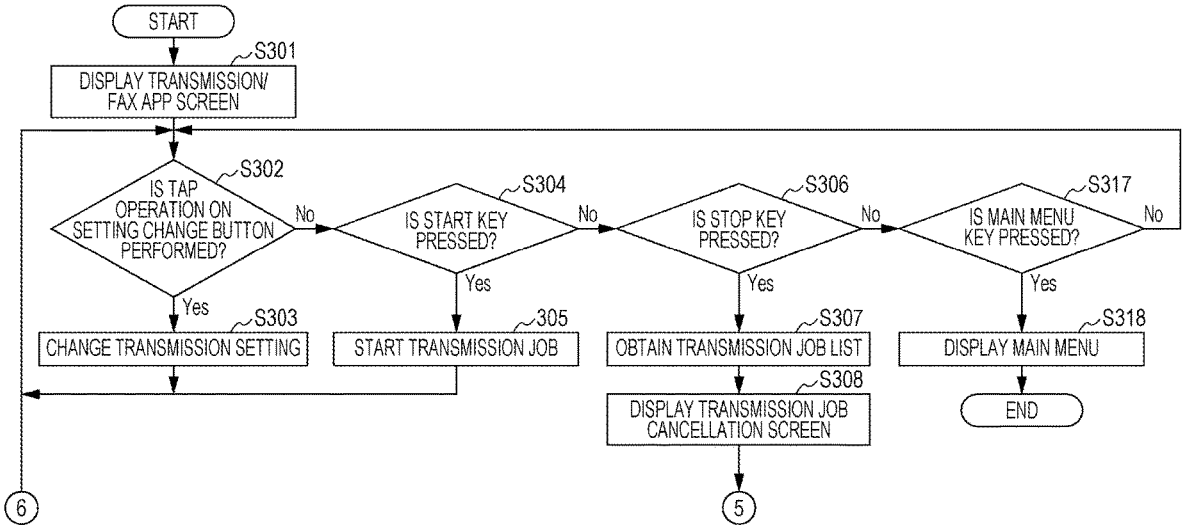
START
S301
DISPLAY TRANSMISSION/ FAX APP SCREEN
S302
IS TAP OPERATION ON SETTING CHANGE BUTTON PERFORMED?
No
S304
IS START KEY PRESSED?
No
S306
IS STOP KEY PRESSED?
No
S317
IS MAIN MENU KEY PRESSED?
No
Yes
S303
CHANGE TRANSMISSION SETTING
Yes
305
START TRANSMISSION JOB
Yes
S307
OBTAIN TRANSMISSION JOB LIST
Yes
S318
DISPLAY MAIN MENU
S308
DISPLAY TRANSMISSION JOB CANCELLATION SCREEN
END
6
5

FIG. 12B

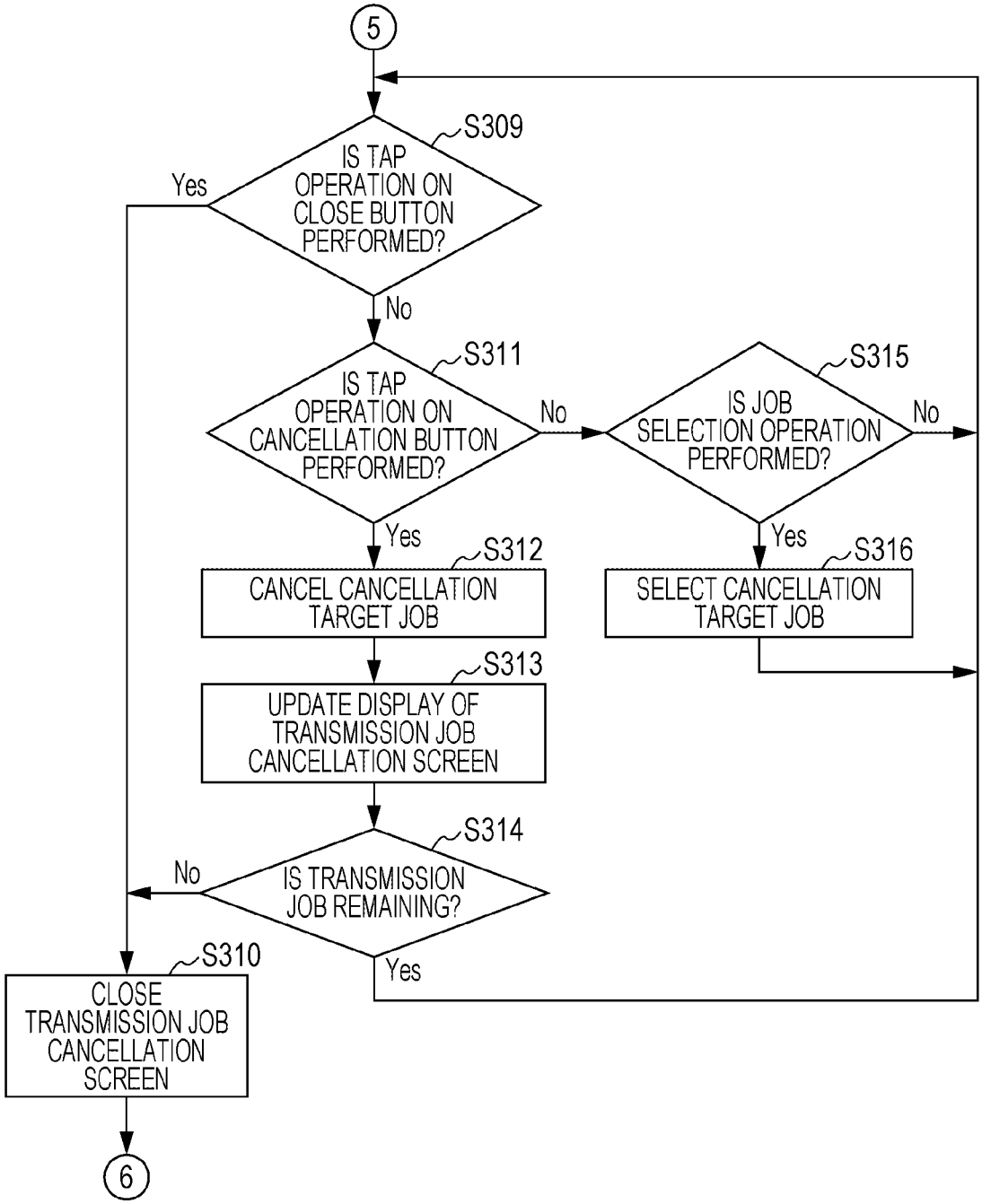
5
S309
IS TAP OPERATION ON CLOSE BUTTON PERFORMED?
Yes
No
S311
IS TAP OPERATION ON CANCELLATION BUTTON PERFORMED?
No
S315
IS JOB SELECTION OPERATION PERFORMED?
No
Yes
S312
CANCEL CANCELLATION TARGET JOB
Yes
S316
SELECT CANCELLATION TARGET JOB
S313
UPDATE DISPLAY OF TRANSMISSION JOB CANCELLATION SCREEN
S314
IS TRANSMISSION JOB REMAINING?
No
Yes
S310
CLOSE TRANSMISSION JOB CANCELLATION SCREEN
6

FIG. 13A

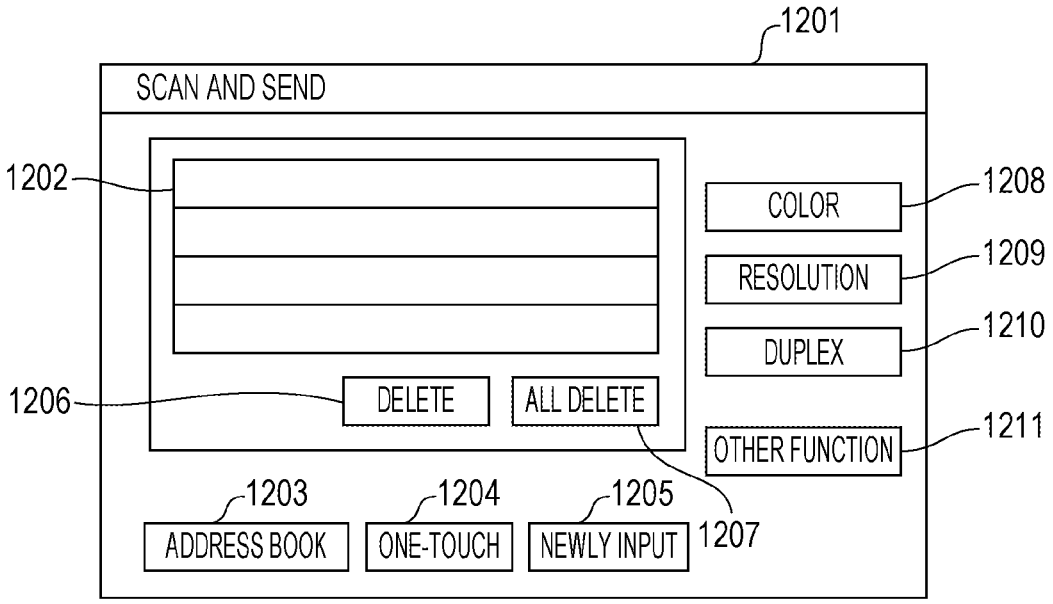

FIG. 13B

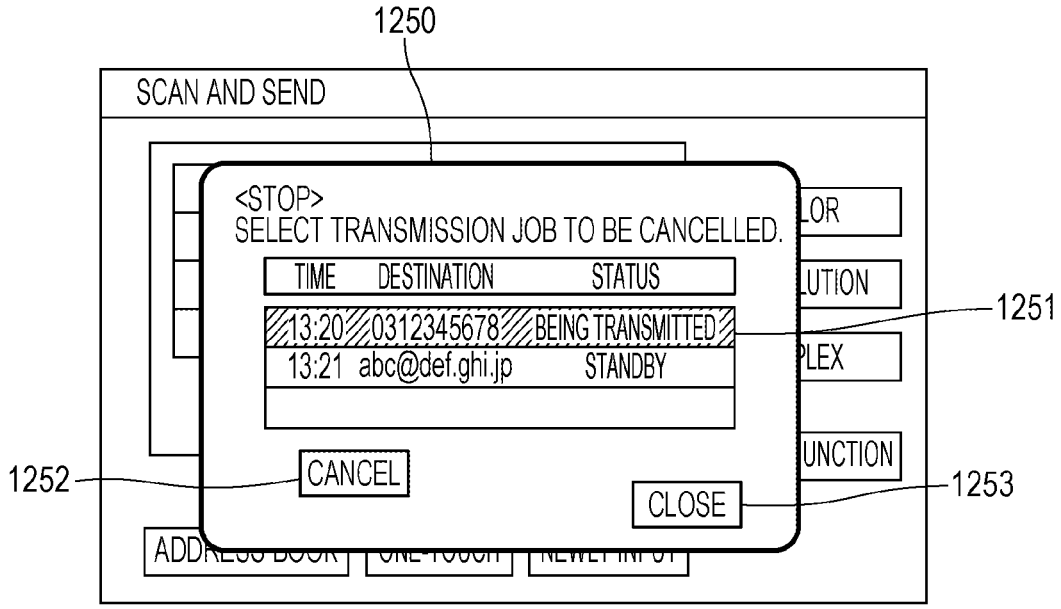

FIG. 14A1

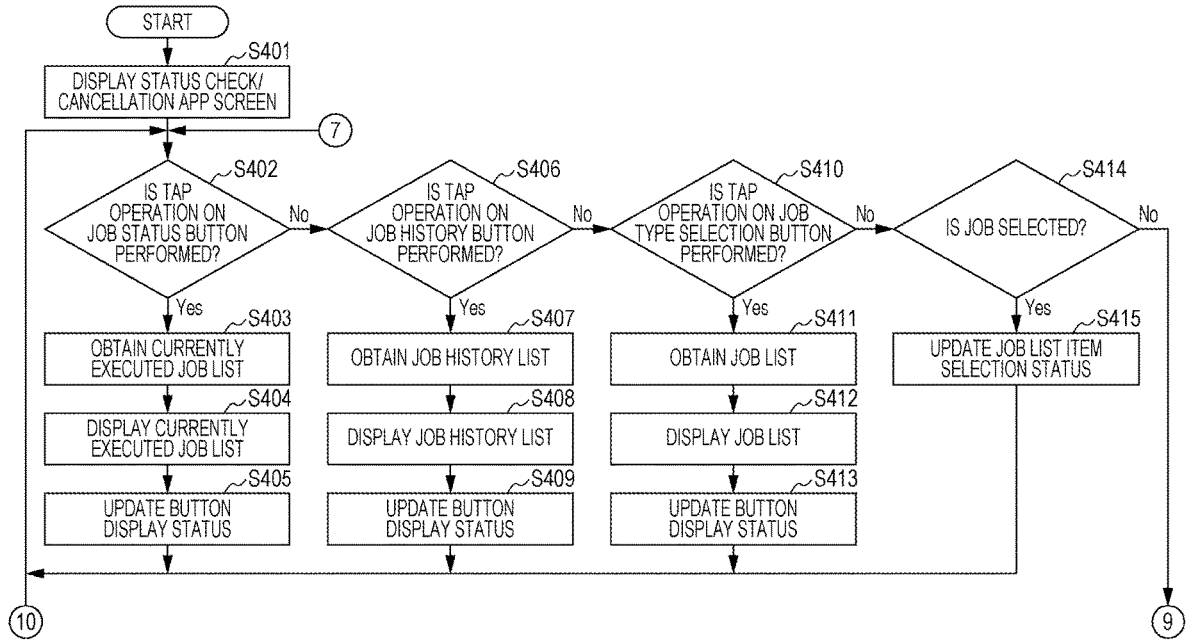
START
S401
DISPLAY STATUS CHECK/ CANCELLATION APP SCREEN
7
S402
IS TAP OPERATION ON JOB STATUS BUTTON PERFORMED?
No
S406
IS TAP OPERATION ON JOB HISTORY BUTTON PERFORMED?
No
S410
IS TAP OPERATION ON JOB TYPE SELECTION BUTTON PERFORMED?
No
S414
IS JOB SELECTED?
No
Yes
S403
OBTAIN CURRENTLY EXECUTED JOB LIST
S404
DISPLAY CURRENTLY EXECUTED JOB LIST
S405
UPDATE BUTTON DISPLAY STATUS
Yes
S407
OBTAIN JOB HISTORY LIST
S408
DISPLAY JOB HISTORY LIST
S409
UPDATE BUTTON DISPLAY STATUS
Yes
S411
OBTAIN JOB LIST
S412
DISPLAY JOB LIST
S413
UPDATE BUTTON DISPLAY STATUS
Yes
S415
UPDATE JOB LIST ITEM SELECTION STATUS
10
9

FIG. 14A2

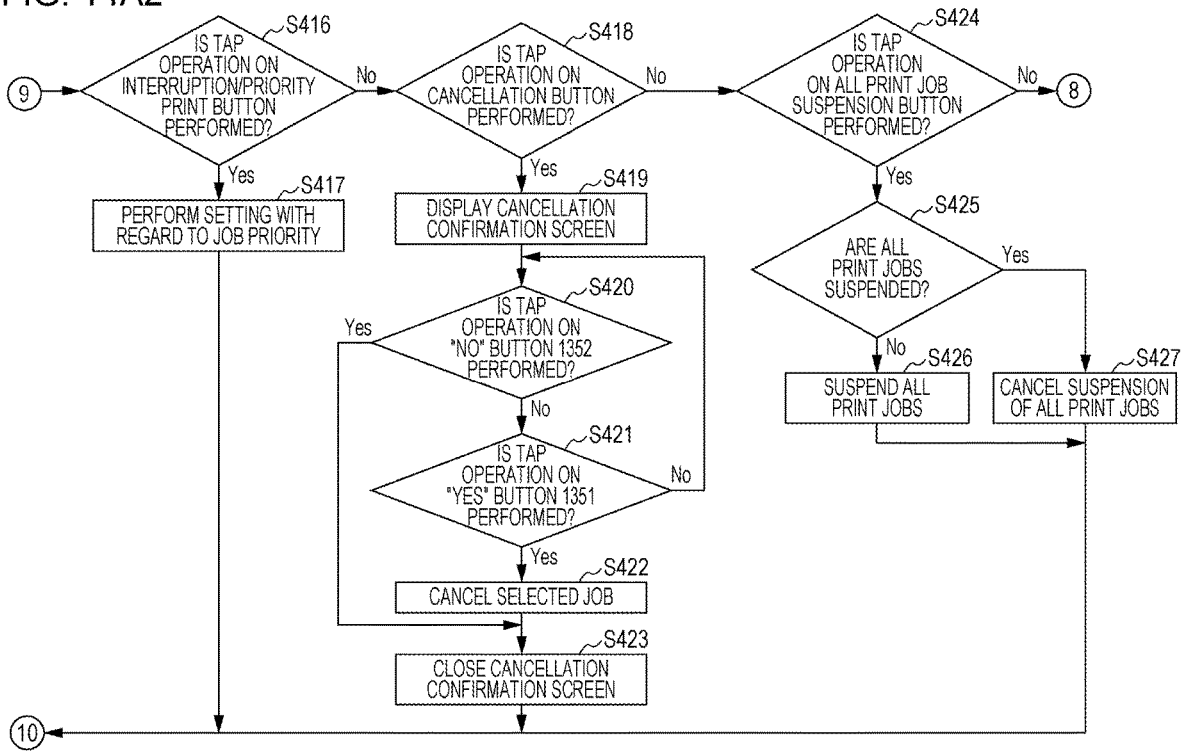
9
S416
IS TAP OPERATION ON INTERRUPTION/PRIORITY PRINT BUTTON PERFORMED?
No
S418
IS TAP OPERATION ON CANCELLATION BUTTON PERFORMED?
No
S424
IS TAP OPERATION ON ALL PRINT JOB SUSPENSION BUTTON PERFORMED?
No
8
Yes
S417
PERFORM SETTING WITH REGARD TO JOB PRIORITY
Yes
S419
DISPLAY CANCELLATION CONFIRMATION SCREEN
Yes
S425
ARE ALL PRINT JOBS SUSPENDED?
Yes
S420
IS TAP OPERATION ON "NO" BUTTON 1352 PERFORMED?
Yes
No
S421
IS TAP OPERATION ON "YES" BUTTON 1351 PERFORMED?
No
Yes
S422
CANCEL SELECTED JOB
S423
CLOSE CANCELLATION CONFIRMATION SCREEN
No
S426
SUSPEND ALL PRINT JOBS
S427
CANCEL SUSPENSION OF ALL PRINT JOBS
10

FIG. 14B

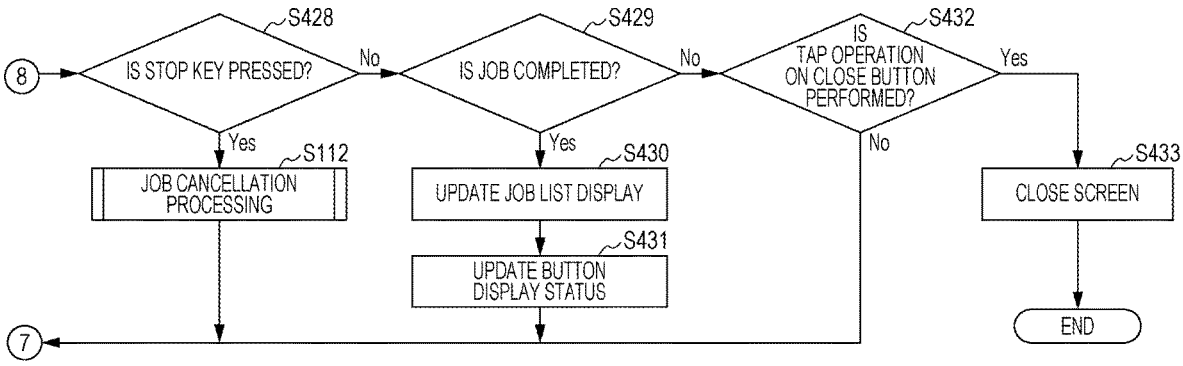
8
S428
IS STOP KEY PRESSED?
No
S429
IS JOB COMPLETED?
No
S432
IS TAP OPERATION ON CLOSE BUTTON PERFORMED?
Yes
Yes
S112
JOB CANCELLATION PROCESSING
Yes
S430
UPDATE JOB LIST DISPLAY
S431
UPDATE BUTTON DISPLAY STATUS
No
S433
CLOSE SCREEN
END
7

FIG. 15A

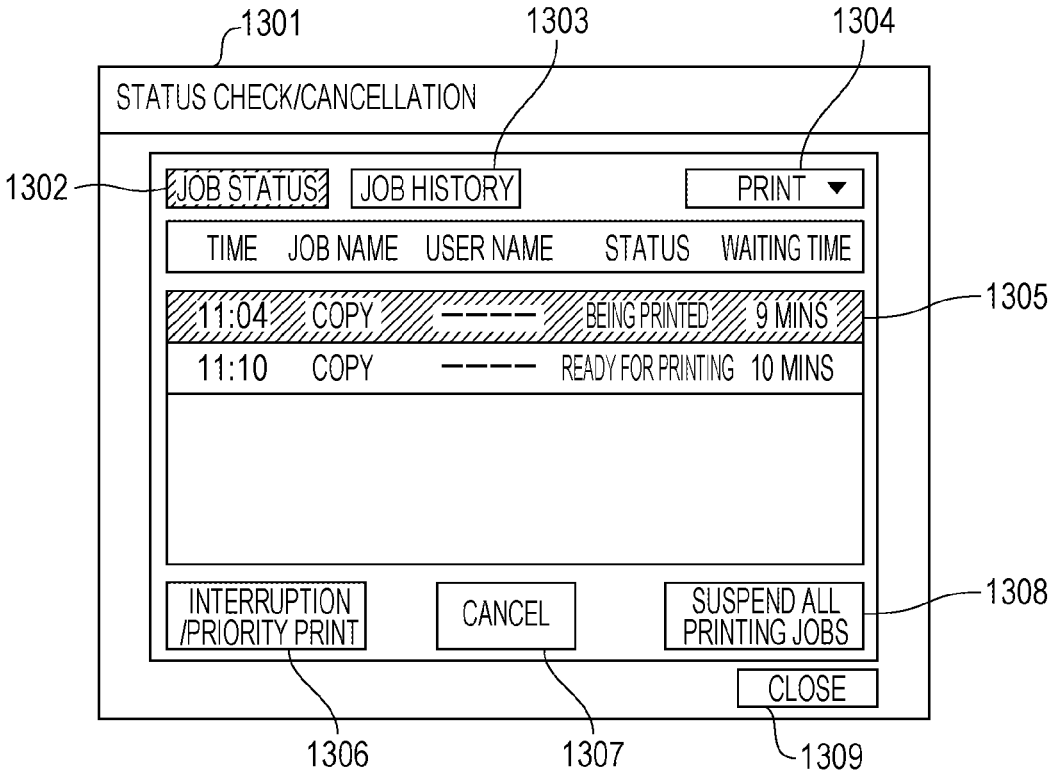

FIG. 15B

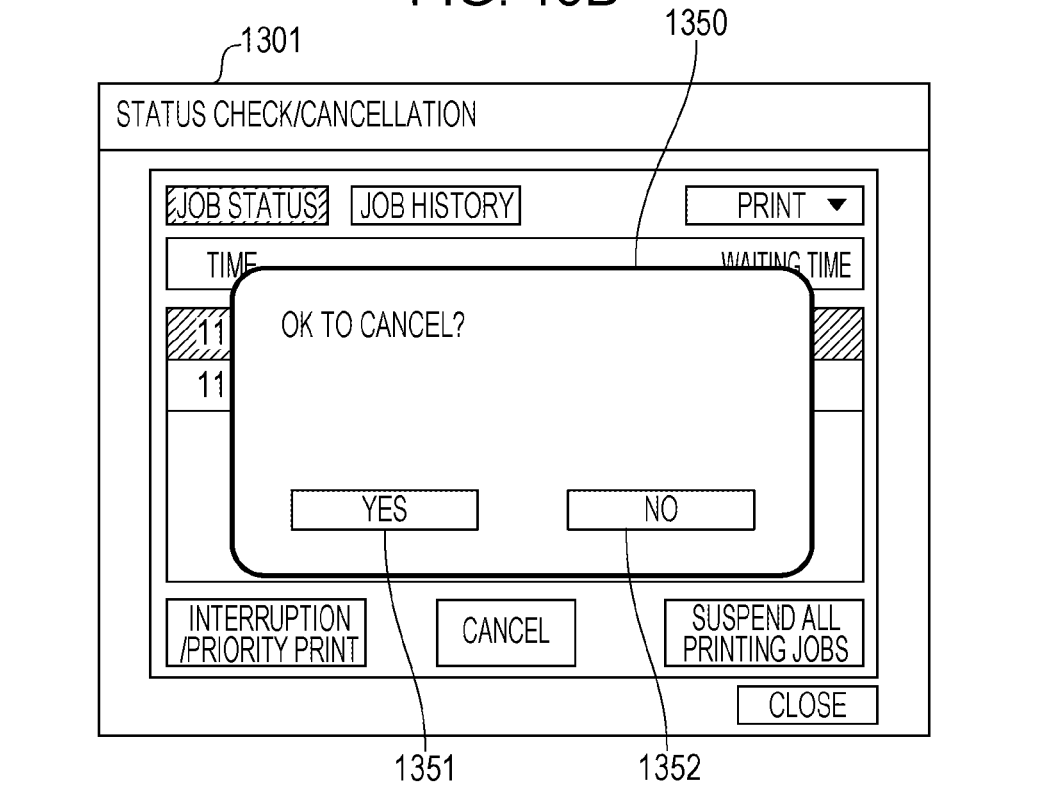

FIG. 16

		JOB TYPE							
		COPY	PRINT	FAX TRANSMISSION	FAX RECEPTION	E-MAIL TRANSMISSION	BOX SAVING	BOX PRINT	REPORT PRINT
JOB TYPE SELECTION BUTTON DISPLAY	PRINTING	✓	✓		✓			✓	✓
	COPY	✓							
	TRANSMISSION			✓		✓			
	FAX TRANSMISSION			✓					
	RECEPTION				✓				
	SAVING						✓		

JOB MANAGEMENT AND CONTROL FOR AN IMAGE FORMING APPARATUS

BACKGROUND

Field

The present disclosure relates to an image forming apparatus and a technology for controlling a user interface for operating the image forming apparatus.

Description of the Related Art

An image processing apparatus having a plurality of functions such as copying, scanning, and facsimile (FAX) transmission is provided with a stop key for suspending a currently executed job. When a user presses a stop key in an image processing apparatus described in Japanese Patent Laid-Open No. 2009-76083, the image processing apparatus can suspend print jobs such as copying and printing. Then, a job to be cancelled is selected from a list of the suspended jobs.

In a case where the user presses the stop key during the display of a setting screen for jobs, it is conceivable that the user desires to suspend the job that can be set on the currently displayed screen. For this reason, in a case where the stop key is pressed during the display of a setting screen for a copy job, the image processing apparatus suspends the copy job and displays a list of the copy jobs.

On the other hand, with regard to a transmission job such as the FAX transmission, when the transmission job is suspended during the transmission of image data, a communication with a transmission destination of the image data is disconnected while the transmission job is suspended, and the transmission job is not to be resumed in some cases. For this reason, in a case where the stop key is pressed during the display of a setting screen for the transmission jobs, the image processing apparatus displays a list of the transmission, jobs without suspending the transmission jobs.

The user may press the stop key in some cases in a state in which a main menu screen, which is to be displayed while the image processing apparatus stands by or immediately after login processing is performed, is displayed. For example, the above-described cases include a case where, after the user presses a start key to start a job, the user temporarily leaves a place in front of the image processing apparatus and the like. In order for the user to cancel the job, when the user comes back to the place in front of the image processing apparatus, the main menu screen is displayed on the display.

SUMMARY

According to an embodiment, an image processing apparatus is provided and includes a reading unit configured to read an original, a transmission unit configured to transmit image data to an external apparatus, a printing unit configured to print an image, a display unit configured to display the image, and a control unit configured to suspend a job executed by the printing unit in response to a selection of a key for suspending a currently executed job, display a list of jobs on the display unit, and cancel a job selected by a user from the displayed list of the jobs, in which the control unit displays a list of transmission jobs for the transmission unit to transmit the image data generated when the reading unit reads the original in response to the selection of the key during display of a main menu screen for accepting a selection of a function to be used.

Further features will become apparent from the following description of exemplary embodiments with reference to the attached drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a block diagram illustrating a hardware configuration of an image processing apparatus according to an exemplary embodiment described in the present specification.

FIG. **2** is a block diagram illustrating an example of a configuration of a network system in which the image processing apparatus operates.

FIG. **3** illustrates a configuration of an operation unit of the image processing apparatus.

FIG. **4** is a block diagram illustrating a function module configuration of the image processing apparatus.

FIG. **5** illustrates an example of a screen configuration of a main menu displayed on a display of the image processing apparatus.

FIG. **6** is a flow chart illustrating processing executed when a user instruction is accepted on a main menu screen in the image processing apparatus.

FIG. **7**A is a flow chart illustrating processing executed when a stop key is pressed during the display of the main menu screen in the image processing apparatus.

FIG. **7**B is a flow chart illustrating update processing of a job list in the image processing apparatus.

FIG. **7**C is a flow chart illustrating processing executed after the display of the job list in the image processing apparatus.

FIGS. **8**A and **8**B illustrate an example of a screen displayed when the stop key is pressed during the display of the main menu screen in the image processing apparatus.

FIGS. **8**C and **8**D illustrate an example of a transmission job list and a print job list displayed when the stop key is pressed during the display of the main menu screen in the image processing apparatus.

FIGS. **8**E and **8**F illustrate an example of a display screen in a case where no jobs to be cancelled exist when the stop key is pressed during the display of the main menu screen and a screen for confirming the cancellation of the job in the image processing apparatus.

FIGS. **9**A and **9**B are flow charts illustrating processing executed by a copy application (app) in the image processing apparatus.

FIGS. **10**A and **10**B illustrate an example of a "copy" screen in the image processing apparatus.

FIGS. **11**A, **11**B, and **11**C illustrate information obtained from a job processing unit in the image processing apparatus.

FIGS. **12**A and **12**B are flow charts illustrating processing executed by a transmission/FAX app in the image processing apparatus.

FIGS. **13**A and **13**B illustrate an example of a "scan and transmit" screen in the image processing apparatus.

FIG. **14**A**1** and FIG. **14**A**2** are flow charts illustrating processing executed by a status check/cancel app in the image processing apparatus.

FIG. **14**B is a flow chart illustrating processing subsequently executed by the status check/cancel app after the processing illustrated in FIG. **14**A**1** and FIG. **14**A**2** in the image processing apparatus.

FIGS. **15**A and **15**B illustrate an example of a "status check/cancel" screen in the image processing apparatus.

FIG. **16** illustrates a correspondence relationship between items of job type selection buttons and job types set as targets in the image processing apparatus.

DESCRIPTION OF THE EMBODIMENTS

Hereinafter, an example of an image processing apparatus functioning as a job processing apparatus will be described with reference to the drawings.

In a case where a user presses a stop key during the display of a main menu screen, it may not be clear which one of a print job and a transmission job the user desires to cancel. In view of the above, the image processing apparatus suspends the print job that can be suspended. The currently suspended print job is not executed until the user instructs resumption of the print job. For this reason, even if the user does not promptly select the job to be suspended, the execution of the job to be suspended is not completed. On the other hand, since the transmission job is not suspended, while the user selects the transmission job to be suspended, the execution of the transmission job may be completed in some cases. In view of the above, in order that the user promptly selects the transmission job desired to be suspended at the time of the press of the stop key, during the display of the main menu screen, a screen for making it easy to select the transmission job that is not suspended at the time of the press of the stop key is to be displayed.

According to an aspect of the present exemplary embodiment, it is aimed at displaying a screen where the transmission job that is not suspended can be promptly cancelled in a case where the stop key is pressed on the main menu screen. Descriptions on a configuration thereof will be hereinafter provided.

FIG. **1** is a block diagram illustrating a hardware configuration of an example of an image processing apparatus **100** functioning as a job processing apparatus according to the exemplary embodiment.

In FIG. **1**, a control unit **130** is constituted by a central processing unit (CPU) **111**, a random access memory (RAM) **112**, a read only memory (ROM) **113**, an input unit **114**, a display control unit **115**, an external memory interface (I/F) **116**, a communication I/F controller **117**, a printer I/F **118**, and a scanner I/F **119**. These units are connected to a system bus **110**, and data exchange is performed via the system bus **110**. A touch panel **120**, a hard key **121**, a display **122**, an external memory **123**, a primer **124**, and a scanner **125** are connected to the control unit **130**.

The ROM **113** is a non-volatile memory and respectively stores image data and other data, various programs for the CPU **111** to operate, and the like in predetermined areas. The RAM **112** is a volatile memory and is used as a main memory of the CPU **111** and a temporary storage area such as a work area. The CPU **111** uses the RAM **112** as a work memory in accordance with the programs stored in the ROM **113** and controls the respective units of the image processing apparatus **100**, for example. It should be noted that the programs for the CPU **111** to operate is not limited to the programs stored in the ROM **113**, and the programs may also be previously stored in an external memory (such as a hard disc drive) **123**.

The input unit **114** accepts a user operation and generates a control signal in accordance with the operation to be supplied to the CPU **111**. The input unit **114** is connected to the touch panel **120** and the hard key **121** as an input device configured to accept the user operation. It should be noted that the touch panel **120** is, for example, an input device configured to output coordinate information in accordance with a contact position with respect to an input unit having a planar structure. A touch panel based on an one of various methods such as a resistive film method, a capacitance method, a surface acoustic wave method, an infrared method, an electromagnetic induction method, an image recognition method, and an optical sensor method may also be used. The hard key **121** is an input device that can be physically pressed such as a numeric key, a start key, or a stop key. The CPU **111** controls the respective units of the image processing apparatus **100** in accordance with the programs on the basis of control signals that are generated in and supplied from the input unit **114** in accordance with the user operation performed with respect to the input device. With this configuration, it is possible to cause the image processing apparatus **100** to perform the operation in accordance with the user operation.

The display control unit **115** outputs a display signal for causing the display **122** to display an image. For example, the display control signal generated by the CPU **111** in accordance with the program is supplied to the display control unit **115**. The display control unit **115** generates the display signal on the basis of this display control signal to be output to the display **122**. For example, the display control unit **115** displays a graphical user interface (GUI) screen constituting a GUI on the display **122** on the basis of the display control signal generated b the CPU **111**.

The touch panel **120** is constituted in an integrated manner with the display **122**. For example, the touch panel **120** is constituted in a manner that its light transmission does not disturb the display performed by the display **122** and attached to an upper layer of a display surface of the display **122**. Then, input coordinates on the touch panel **120** are associated with display coordinates on the display **122**. With this configuration, it is possible to constitute such a GUI as if the user may directly operate the screen displayed on the display **122**.

The external memory **123** such as a hard disk drive, a floppy disk, a compact disc (CD), a digital versatile disc (DVD), or a memory card can be mounted to the external memory I/F **116**, for example. The external memory **123** reads data from the mounted external memory **123** and writes data with respect to the external memory **123** on the basis of the control of the CPU **111**. The communication I/F controller **117** performs a communication with respect to a network **203** of various types such as a local area network (LAN), the Internet, a public line, a wired network, and a wireless network on the basis of the control of the CPU **111**, for example. The scanner I/F **119** controls image input from the scanner **125**. The printer I/F **118** controls image output to the printer **124**.

FIG. **2** is a block diagram illustrating an example of a configuration of a network system to Which the image processing apparatus **100** of FIG. **1** is connected. In FIG. **2**, a personal computer (PC) **201** is an information processing apparatus configured to input a print job to the image processing apparatus **100** and receive an image generated in the image processing apparatus **100**. When the print job is input from the PC **201** to the image processing apparatus **100**, the image processing apparatus **100** processes the input print job, and the primer **124** outputs a sheet on which the image has been formed. As an alternative to the above-described configuration, the image processing apparatus **100** transmits image data generated when the scanner **125** reads an original to the PC **201** via the network **203**. A network attached storage (NAS) **202** is a storage device that stores the image data generated when the scanner **125** reads the original. A facsimile device (FAX) **204** is a device config-

ured to receive the image data generated when the scanner **125** reads an original and transmit the image data to the image processing apparatus **100**. A connection mode between the image processing apparatus **100** and the FAX **204** may be a connection mode using the public line and may also be a connection mode using the Internet.

FIG. **3** is a schematic diagram illustrating configurations of the touch panel **120**, the hard key **121**, and the display **122**. FIG. **3** illustrates hard keys **301** to **306** that constitute the hard key **121**. The main menu key **301** is a key for displaying the main menu screen for selecting a function to be used on the display **122**. The status check/cancellation key **302** is a key for displaying a "status check/cancellation" screen on the display **122**. The "status check/cancellation" screen is a screen for displaying the currently executed jobs in a list or displaying an already executed job list. The job selected by the user can be cancelled from the "status check/cancellation" screen displayed in the display **122**. The cancellation of the job refers to deletion of the currently executed job or the job to be executed afterwards. The numeric key **303** constituted by the respective hard keys is used for inputting a numeric value such as the number of copies, a telephone number, and the like. The reset key **304** is a key used for instructing to return a setting value of the job set by the user to a previously determined initial value. A start key **305** is a key used for an instruction when the job is input or the scanning is to be started. A stop key **306** is a key for instructing suspension of the job. The job suspended when the user presses the stop key **306** can be resumed by a user instruction. When the job that is ready to be executed is suspended, even when the currently executed job is completed, it is possible to control in a manner that the execution of the job that is ready to be executed is not started. A structure **307** is obtained by overlapping the touch panel **120** and the display **122** with each other.

It should be noted that, according to the present exemplary embodiment, the respective keys **301** to **306** are realized as hard keys as illustrated in FIG. **3**. The respective keys **301** to **306** may also be displayed on the display **122** and realized as soft keys where the press of the key is detected by an operation of the touch panel **120**.

FIG. **4** is a block diagram illustrating an example of a function of the image processing apparatus **100** illustrated in FIG. **1**. The image processing apparatus **100** includes a communication processing unit **401**, a job processing unit **402**, an operation processing unit **403**, and an authentication processing unit **404** as its functions. The respective functional units are realized when the CPU **111** reads out the program stored in the ROM **113** or the external memory **123** into the RAM **112** to be executed.

The communication processing unit **401** executes an analysis on communication contents transmitted to and received from the PC **201**, the NAS **202**, the FAX **204**, and the like connected to the network **203** via the communication I/F controller **117** and a communication control (FIG. **1**). The job processing unit **402** performs the processes of the various jobs executed in the image processing apparatus **100**. Specifically, the printer **124** is controlled to execute the print job, the scanner **125** is controlled to execute a scan job, and the communication I/F controller **117** is controlled to execute the transmission job. In addition, control for stopping processing and cancellation processing of the above-described various jobs is performed.

The operation processing unit **403** controls the display control unit **115** to display various information with respect to the user on the display **122**. Furthermore, the operation processing unit **403** receives an operation instruction from the user which is input from the hard key **121** and the touch panel **120** via the input unit **114** and processes the operation instruction. The authentication processing Unit **404** performs processing related to authentication and management of the user who uses the image processing apparatus **100** in accordance with a login/logout request.

The operation processing unit **403** includes applications (**411** to **416**) for providing functions using the image processing apparatus **100** to the user. The respective applications provide the function to the user independently or in collaboration with other applications.

The main menu app **411** presents a list of the applications that can be used in the image processing apparatus **100** to the user. The main menu app **411** is used for the user to execute the selected application. The status check/cancellation app **412** is used for displaying a job execution status and cancelling the currently executed job. The copy app **413** is used for realizing a copy function for outputting the image read from the scanner **125** from the printer **124**. The transmission/FAX app **414** is used for realizing a transmission/FAX function for transmitting the image read from the scanner **125** through the network **203**. The box app **415** is used for realizing a box function for saving the image read from the scanner **125** in the external memory **123** or a device (for example, the NAS **202**) connected to the network **203**. In addition to the above, an application exists for each function to be provided to the user (**416**). The image processing apparatus **100** can execute the jobs of the plurality of types since the image processing apparatus **100** includes the applications of the plurality of types.

FIG. **5** illustrates an example of a "main menu" screen **1001** displayed on the display **122**. FIG. **6** is a flow chart illustrating processing of the main menu app **411**. Hereinafter an operation of they main menu app **411** will be described with reference to the flow chart of FIG. **6**. It should be noted that the contents of the respective flow charts according to the following respective exemplary embodiments are recorded in the ROM **113** as a program code. As an alternative to the above-described configuration, a mode may also be adopted in which the program code recorded in the external memory **123** is read into the RAM **112**, and the program code downloaded through the network **203** is temporarily saved in the RAM **112**. The CPU **111** reads the programs recorded in the ROM **113** and the RAM **112** and executes the respective processes described in the programs. As a result, the contents described in the respective flow charts are realized. When a power supply of the image processing apparatus **100** turns on or any one of screens is displayed on the display **122**, the processing described in the flow chart of FIG. **6** is started in accordance with the press of the main menu key **301**. After the user logs in the image processing apparatus **100**, when the "main menu" screen **1001** is displayed in the first place, the processing described in FIG. **6** may also be executed.

The main menu app **411** detects the press of the main menu key **301** (S**101**).

Next, the main menu app **411** displays the "main menu" screen **1001** on the display **122** (S**102**). The "main menu" Screen **1001** its a screen as illustrated in FIG. **5** for selecting a function to be used by the user. As illustrated in FIG. **5**, a "copy" key **1002**, a "scan and send" key **1003**, a "scan and save" key **1004**, an another app key **1005**, and the like are arranged on the "main menu" screen **1001**. When the user performs a tap operation on a displayed key to be selected, it is possible to use the selected application.

The main menu app **411** determines whether or not the "copy" key **1002** is selected (S**103**). In a case where the tap

operation on the "copy" key **1002** is performed, the main menu app **411** calls out the copy app **413** and ends the processing described in this flow chart. In a case where the copy key is not selected, the main menu app executes the processing described in S**105**.

Next, the main menu app **411** determines whether or not the tap operation on the "scan and send" key **1003** is performed (S**105**). In a case where the tap operation on the "scan and send" key **1003** is performed, the main menu app **411** calls out the transmission/FAX app **414** (S**106**). In a case where the tap operation on the "scan and send" key **1003** is not performed, the main menu app **411** determines whether or not the tap operation on the "scan and send" key **1003** is performed (S**107**). In a case where the tap operation on the "scan and save" key **1004** is performed, the main menu app **411** calls out the box app **415** (S**108**). The main menu app **411** determines Whether or not the status check/cancellation key **302** is pressed (S**109**). In a case where the status check/cancellation key **302** is pressed, the main menu app **411** calls out the status check/cancellation app **412** (S**110**). In a case where the status check/cancellation key **302** is not pressed, the main menu app **411** determines whether or not the stop key **306** is pressed (S**111**). In a case where the stop key **306** is pressed, the main menu app **411** executes job cancellation processing (S**112**). A detail of the processing executed in S**112** will be described below with reference to FIG. **7**A, FIG. **7**B and FIG. **7**C. In a case where the stop key **306** is not pressed, the main menu app **411** determines whether or not the other app key such as, for example, the function A key **1005**, is selected (S**113**). In a case where the other app key is selected, the main menu app **411** calls out the selected application (S**411**). In a case where the other app key is not selected, the main menu app **411** returns the processing to S**102**. After the main menu app **411** calls out the selected application, the processing described in this flow chart is ended.

Herein, the processing when the stop key is pressed on the main menu screen according to the present exemplary embodiment and a screen displayed on the display **122** at this time will be described.

FIG. **7**A, FIG. **7**B, and FIG. **7**C are flow charts illustrating processing executed by the main menu app **411** in S**112** of FIG. **6**. FIG. **8**A, FIG. **8**B, FIG. **8**C, FIG. **8**D, FIG. **8**E, and FIG. **8**F are explanatory diagrams for describing a screen displayed in accordance with the press of the stop key **306** while the display **122** displays the "main menu" screen **1001**.

The processing described in the flow charts illustrated in FIG. **7**A, FIG. **7**B, and FIG. **7**C is realized when the CPU **111** develops the program stored in the ROM **113** or the external memory **123** into the RAM **112** to be executed. According to the present exemplary embodiment, the descriptions will be provided while the main menu app **411** executes the processing, but another application or a dedicated-use application at the time of the press of the stop key may also execute the following processing.

The main menu app **411** displays a job cancellation screen **1401** on the display **122** (S**2001**). FIG. **8**A illustrates an example of a screen displayed in S**2001** on the display **122**. A "transmission job list" button **1402** is a button for displaying a list of the transmission jobs corresponding to the cancellation target. A "print job list" button **1403** is a button for displaying the print jobs set as cancellation targets in a list. A job list area **1404** is an area where the list of the jobs set as the cancellation targets is displayed. A cancellation button **1405** is a button for cancelling the job selected from the jobs displayed in the job list area **1404**. An area **1407** is an area where a message to the user is displayed. A close button **1406** is a button for closing the job cancellation screen. In S**2001**, the "transmission job list" button **1402** and the "print job list" button **1403** are set to be invalid and displayed by using a broken line or displayed in a graying-out manner. Both the job list area **1404** and the area **1407** are not displayed.

The main menu app **411** determines whether or not the print job exists in the job processing unit **402** (S**2002**). The main menu app **411** obtains the presence or absence of the print job from the job processing unit **402** and executes the determination in S**2002**. The print job includes a copy job, a print job for printing the image data transmitted from the PC, a box print job for printing the image data obtained from the external memory **123** or the NAS **202**, or the like. In a case where die print job exists in the job processing unit **402**, the main menu app **411** executes the processing in S**2003** and subsequent steps. In a case where the print job does not exist in the job processing unit **402**, the main menu app **411** executes the processing in S**2005** and subsequent steps which will be described below.

The main menu app **411** instructs the job processing unit **402** to suspend all the print jobs, and a flag indicating that all the print jobs are suspended is set in the RAM **112** (S**2003**). The job processing unit **402** suspends the print job held by the job processing unit **402** in accordance with the instruction from the main menu app **411**.

The main menu app **411** displays an indication that all the print jobs are suspended in the area **1407** (S**2004**).

The main menu app **411** obtains information related to the presence or absence of the transmission job from the job processing unit **402** and determines the presence or absence of the transmission job (S**2005**). The transmission job refers, for example, to a job for performing FAX transmission oldie image data generated when the scanner **125** scans the original or a job for transmitting the image data to another information processing apparatus. In a case where the transmission job exists, the main menu app **411** executes the processing in S**2006** and subsequent steps. In a case where the transmission job does not exist, the main menu app executes the processing in S**2010** and subsequent steps.

In S**2006**, the main menu app **411** obtains information related to the presence or absence of the print job from the job processing unit **402** to determine the presence or absence of the print job. In S**2006**, it is supposed that the main menu app **411** performs processing, similar to S**2002**. In S**2006**, a flag indicating the presence or absence of the print job may be set in the RAM **112**, and the main menu app **411** refers to the flag S**2006** to determine the presence or absence of the print job. In a case where the print job exists, the main menu app **411** sets the print job list button **1403** to be valid and sets the "print job list" button **1403** in at non-selected state (S**2007**). In S**2007**, the setting of the "print job list" button **1403** to be valid means that the broken line or the graying-out display of the "print job list" button is cancelled, and the tap operation on the "print job list" button **1403** from the user is accepted. Thereafter, the main menu app **411** executes processing which wilt be described later in S**2008**.

In S**2006**, in a case where the print job does not exist, the main menu app **411** executes the processing described in S**2008**. In S**2008** the main menu app **411** sets the "transmission job list" button **1402** to be valid and sets the "transmission job list" button **1402** in a selected state. The setting of the "transmission job list" button **1402** to be valid means that the broken line or the graying-out display of the

"transmission job list" button **1402** is cancelled, and the tap operation on the transmission job list" button **1402** from the user is to be accepted.

Thereafter, the main menu app **411** performs processing that will be described below and updates the of the jobs set as the cancellation targets displayed in the job list area **1404** (S**2009**). Then, the main menu app **411** ends the processing described in this flow chart.

In a case where it is determined in S**2006** that the transmission job exists and it is determined in S**2007** that the print job does not exist, a screen illustrated in FIG. **8**B is displayed on the display **122**. On the screen **1401** illustrated in FIG. **8**B the "transmission job list" button **1402** is set to be valid, and the "print job list" button **1403** is set to be invalid. That is, even when the user preforms the tap operation on the "print job list" button **1403** the list displayed in the job list area **1404** is not switched.

In a case where the transmission job exists in S**2006** and it is determined in S**2007** that the print job exists, a screen illustrated in FIG. **8**C is displayed on the display **122**. On the screen **1401** illustrated in FIG. **8**C, the "transmission job list" button **1402** and the "print job list" button **1403** are set to be valid. In FIG. **8**C, the "transmission job list" button **1402** is set in a pressed state, and the "print job list" button **1403** is set in a non-pressed state. A list of the transmission jobs corresponding to the cancellation targets is displayed in the job list area **1404**. In a case where the user perform the tap operation on the "print job list" button **1403**, a screen illustrated in FIG. **8**D is displayed on the display **122**. In FIG. **8**D, the "transmission job list" button **1402** is set in the non-pressed state, and the "print job list" button **1403** is set in the pressed state. A list of the transmission jobs corresponding to the cancellation targets is displayed in the job list area **1404**. A message is displayed in the area **1407** which notifies the user that the print job is suspended, and the printing is to be resumed when the tap operation on the close button **1406** is performed.

In a case where it is determined in S**2010** that the print job does not exist, the main menu app **411** displays a screen for notifying the user that the cancellation target job does not exist on the display **122** in S**2012**. A screen illustrated in FIG. **8**E is an example of a screen for notifying the user that the cancellation target job does not exist. A message **1502** notifies the user that the transmission job and the print job which are set as the cancellation candidates do not exist. Furthermore, the message **1502** notifies the user that the job which starts after the user presses the stop key **306** is executed. For example, after the user presses the stop key **306**, it is supposed that the execution instruction of the print job is transmitted from the PC **201** to the image processing apparatus **100**. In this case, the print job transmitted from the PC **201** is executed. A close button **1503** is a button for ending the display of this screen and displaying the main menu screen on the display **122**.

The main menu app **411** determines whether or not the tap operation on the close button **1503** is performed (S**2103**). In a case where the tap, operation on the close button **1503** is not performed, the main menu app **411** continues perfuming the processing described in S**2103**. In a case where the tap operation on the close button **1503** is performed, the main menu app **411** ends display of a screen **1501** indicating no job (S**2014**). Thereafter, the main menu app **411** ends the display of the job cancellation screen displayed in S**2001** and completes the processing described in this flow chart (S**2105**).

Next, the processing executed in S**2009** of FIG. **7**A will be described with reference to FIG. **7**B. The program for executing the processing described in this flow chart is stored in the ROM **113** or the external memory **123**, and the processing is realized when the above-described program developed into the RAM **112** is executed.

The main menu app **411** selects a type of the job corresponding to a an update target (S**2101**). The main menu app **411** refers to statuses of the "transmission job list" button **1402** and the "print job list" button **1403** and selects the type of the job set in the pressed state as the update target of the job list. That is, when the "transmission job list" button **1402** is in the pressed state, the transmission job is set as the update target, and when the "print job list" button **1403** is in the pressed state, the print job is set as the update target.

The main menu app **411** obtains a currently executed job list from the job processing unit **402** with regard to the job type selected in S**2101** (S**1202**). Then, the main menu app **411** displays the obtained currently executed job list in the job list area **1404** (S**2103**). Next, the main menu app **411** updates a display status of the cancellation button **1405** (S**1204**). In a case where the job exists in the job list obtained in S**2102**, the main menu app **411** sets the cancellation button **1405** to be valid. When the cancellation button **1405** is set to be valid, the user can cancel the selected job by performing the tap operation on the cancellation button **1405**. In a case where the job does not exist in the job list obtained in S**2102**, the main menu app **411** sets the cancellation button **1405** to be invalid. When the cancellation button **1405** is set to be invalid, the cancellation button **1405** is displayed in a graying-out manner, and the job cancellation is not performed even when the user performs the tap operation on the cancellation button **1405**.

The main menu app **411** selects the job to be displayed in the selected state from the jobs included in the displayed job list (S**2105**). For example, when the update processing of the job list illustrated in FIG. **7**B is started, it is supposed that the job is selected in the job list displayed in the job list area **1404**. At this time, the main menu app **411** also selects the same job as the job selected in the job list before the update in the job list after the update. In a case where the job is not selected in the job list before the update, the main menu app **411** selects the job having the earliest time at which the job starting instruction is performed. In a case where the job is not included in the job list after the update, the processing described in S**2105** is completed without selecting any of the jobs.

Next, processing after the completion of the processing in S**2009** will be described with reference to FIG. **7**C. The program for executing the processing described in this flow chart is stored in the ROM **113** or the external memory **123**, and the processing is realized when the above-described program developed into the RAM **112** is executed.

The main menu app **411** determines whether or not the tap operation on the cancellation button **1405** is detected (S**2201**). In a case where the tap operation on the cancellation button **1405** is detected, the main menu app **411** instructs the job processing unit **402** to cancel the selected job among the jobs displayed in the job list area **1404**. The job processing unit **402** cancels the selected job in accordance with the instruction of the job cancellation received from the main mum app **411**. The main menu app **411** displays a cancellation confirmation screen **1350** on the display **122** (S**2203**). FIG. **8**F illustrates an example of the cancellation confirmation screen **1350**. A "yes" button **1351** is a button for cancelling the selected job, and a "no" button **1352** is a button for returning to the job selection screen without cancelling the selected job. The main menu app **411** determines whether or not the tap operation on the "no"

button **1352** is performed (S**2204**). In a case where the tap operation on the "no" button **1352** is performed, the main menu app **411** returns the processing to S**2201**. In a case where the tap operation on the "no" button **1352** is not performed, the main menu app **411** determines whether or not the tap operation on the "yes" button **1351** is performed (S**2205**). In a case where the tap operation on the "yes" button **1351** is not performed, the main menu app **411** returns the processing to S**2204**. In a case where the tap operation on the "yes" button **1351** is performed, the main menu app **411** executes the update of the job list described in S**2009** and advances the flow to the processing in S**2015** of FIG. **7**A.

The main menu app **411** determines whether or not the tap operation on the "transmission job list" button **1402** or the "print job list" button **1403** is performed (S**2206**). In a case where the tap operation on the "transmission job list" button **1402** or the "print job list" button **1403** is performed, the main menu app **411** updates the selected job list button into the pressed state. Then, the main menu app **411** updates the job list button that has not been selected into the non-pressed state (S**2207**). Thereafter, the main menu app **411** executes the processing described in S**2009**.

The main menu app **411** determines whether or not the notification of the completion of the job is performed (S**2008**). For example, in a case where the execution of the job that is not to be suspended such as the FAX transmission is completed, the main menu app **411** receives the completion notification of the job from the job processing unit **402** and determines that the job is completed. In a case where the job is completed, the main menu app **411** executes the processing described in S**2009**.

In a case where the job is not completed, the main menu app **411** determines whether or not the job is selected (S**2209**). In a case where the job is selected, the main menu app **411** sets the job selected by the user in the selected state and displays the selected job (S**2210**). The main menu app **411** also sets the other job in the non-selected state to be displayed. Thereafter, the main menu app **411** executes the processing described in S**2009**.

The main menu app **411** determines whether or not the tap operation on the close button is performed (S**2211**). In a case where the tap operation on the close button is not performed, the main menu app **411** returns the processing to S**2201**. In a case where the tap operation on the close button is performed, the main menu app **411** determines whether or not all the print jobs are suspended (S**2212**). The main menu app **411** refers to the flag stored in the RAM **112** and determines whether or not all the print jobs are suspended. In a case where all the print jobs are not suspended, the main menu app **411** completes the processing described in FIG. **7**C. In a case where all the print jobs are suspended, the main menu app **411** instincts the job processing unit **402** to cancel the suspension with respect to all the print jobs (S**2213**). The job processing unit **402** cancels the suspension of all the print jobs in accordance with the instruction from the main menu app **411**. Thereafter, the main menu app **411** completes the processing described in FIG. **7**C.

The processing executed in a case where the stop key is pressed on the main menu app screen has been described above. The image processing apparatus **100** displays the list of the transmission jobs in accordance with the press of the stop key during the display of the main screen as described above. With the above-described configuration, it is possible to display the screen in which the transmission job that is not to be suspended is more easily cancelled than the print job to be suspended on the basis of the press of the stop key during the display of the main screen.

Next, an operation of the image processing apparatus **100** when copying is selected on the main menu screen will be described with reference to FIGS. **9**A and **9**B and FIGS. **10**A and **10**B. FIGS. **9**A and **9**B illustrate processing, executed by the copy app **413** when the user performs the tap operation on the "copy" key **1002** in the main menu. The program for executing the processing described in this flow chart is stored in the ROM **113** or the external memory **123**, and the processing is realized when the above-described program developed into the RAM **112** is executed.

The copy app **413** receives a notification from the main menu app **411** in S**104** of FIG. **6** and displays a copy app screen on the display **122** (S**201**). FIG. **10**A illustrates an example of a copy screen **1101** displayed on the display **122** in S**201**. Setting change buttons **1102** to **1109** for changing copy settings are arranged on the cop screen **1101**. Among the setting change buttons **1102** to **1109**, the color selection button **1102** is used for setting a color mode. The magnification button **1103** is used for setting a magnification. The sheet selection button **1104** is used for setting a sheet. The finishing button **1105** is used for setting finishing. The duplex button **1106** is used for setting duplex copying. The density button **1107** is used for setting a density. The original type button **1108** is used for setting a type of the original. The other function button **1109** is used for performing a setting other than the above-described settings.

Next, the copy app **413** determines whether or not the user performs the tap operation on the setting change buttons **1102** to **1109** for performing the setting change in the copying (S**202**). In a case where the tap operation on any one of the setting change buttons **1102** to **1109** is performed, the copy app **413** changes the copy setting in accordance with a key where the press has been detected in S**202** described above (S**204**). For example, when the key where the tap operation has been detected in S**202** is the color selection button **1102**, the cop app **413** displays the screen for setting the color mode on the display **122** sets the color mode in accordance with the operation of the user. The same also applies to the case of the other setting change buttons **1103** to **1109**. In a case where the numeric key **303** or the reset key **304** is pressed in S**202**, the processing described in S**204** may be executed. In a case here it is determined in S**202** that the numeric key **303** is pressed, the copy app **413** sets the number of copies in accordance with the pressed key. As an alternative to the above-described configuration, in a case where the reset key **304** is pressed, the copy app **413** may also discard the setting value that has been set thus far and set the initial value stored in the ROM **113**. After the end of this step, the copy app **413** returns the processing to step S**202**.

In a case where the tap operation on the setting change buttons **1102** to **1109** is not performed, the copy app **413** determines whether or not the start key is pressed (S**203**). In a case where the start key is pressed, the copy app **413** instructs the job processing unit **402** to start the copy job on the basis of the set copy setting (S**205**). When the start of the copy job is instructed, the job processing unit **402** generates a new job and holds information thereof in the RAM **112**. The job includes information indicating a "status" of this job. The information indicating the "status" included in the job takes a value such as "standby", "in execution", or "in suspension". The status of the copy job immediately after the generation is "standby". In a case where the printer **124** and the scanner **125** are not used for the other job and can be used, the job processing unit **402** changes the job status

to "in execution" and performs reading of the original from the scanner **125** and printing from the printer **124**. The operation of the job processing unit **402** is independent from the flow of the copy app illustrated in FIGS. **9**A and **9**B and is processed in parallel. That is, the copy app **413** returns the processing to step S**202** without waiting for the execution end of the copy job generated in the S**205**.

In a case where the stop key is not pressed, the copy app **413** determines whether or not the stop key **306** is pressed (S**206**). In a case where the stop key is pressed, the copy app **413** instructs the job processing unit **402** to suspend all the copy jobs (S**207**). In response to the instruction of the suspension of all the copy jobs, the job processing unit **402** suspends all the copy jobs. That is, the job processing unit **402** sets the statuses of all the copy jobs generated in response to the copy starting instruction in step S**205** as "in suspension". In a case where the copy job that is still being executed performs the reading from the scanner **125** and the output to the printer **124**, the job processing unit **402** suspends the operations of the scanner **125** and the printer **124** when the process reaches a boundary of pages.

Next, the copy app **413** obtains a list of the copy jobs from the job processing unit **402** (S**208**). FIG. **11**A illustrates an example of the obtained list of the copy jobs. In the example of FIG. **11**A, the list of the copy jobs includes information of the two jobs. The information of the respective jobs is constituted by information including the job ID for uniquely identifying the job, the job accepted time, the number of pages, the number of copies, and the job status. The information included in the job list is not limited to the above-described information. For example, the settings of the respective copy jobs may be included in the copy job.

Next, the copy app **413** displays a copy job cancellation screen on the basis of the job list obtained in S**207** (S**209**). FIG. **10**B illustrates an example of the copy job cancellation screen. As illustrated in FIG. **10**B, a copy job cancellation screen **1150** is displayed while being overlapped with the copy app screen. A copy job list **1151**, a cancellation button **1152** and a "resume copy" button **1153** are arranged on the copy job cancellation screen **1150**. The information of the respective jobs is displayed in the copy job list **1151** on the basis of the information of the job obtained in S**207**. According to the present exemplary embodiment, the job accepted time, the number of pages, the number of copies, and the job status are displayed as the information of the respective jobs. The user can select one of the displayed jobs in the copy job list **1151**. In FIG. **10**B, the selected job is represented by way of hatching. The initial job in the job list, that is, the job having the earliest job accepted time is selected on the copy job cancellation screen **1150** displayed in the first place after the stop key **306** is pressed. According to the present exemplary embodiment, only the copy job is obtained from the job processing unit **402** and displayed as a cancellation target. With the above-described configuration, since the job having a type other than copying is not displayed as the cancellation target, it becomes easier for the user to search for the job to be cancelled in a case where the copy job is desired to be cancelled.

Next, the copy app **413** accepts the user operation and determines whether or not the accepted user operation is the tap operation on the "resume copy" button **1153** (S**210**). In a case where the tap operation on the "resume copy" button **1153** is performed, the copy app **413** instructs the job processing unit **402** to resume the copy job suspended in S**206** (S**211**). The job processing unit **402** sets the job status as "in execution" or "standby" in accordance with the instruction from the copy app **413**. Thereafter, the copy app **413** ends the display on the copy job cancellation screen **1150** and returns the processing to S**202** (S**212**).

In a case where the tap operation on the "resume copy" button **1153** is not performed, the copy app **413** determines whether or not the job is selected on the basis of the press of the item (job) displayed in the copy job list **1151** (S**213**). In a case where the job is selected, the copy app **413** displays the selected job by way of hatching to be put into the selected state. The copy app **413** also ends the hatching display of the item that has not been selected and cancels the selected state. After this step the copy app **413** returns the processing to S**209**.

In a case where the job selection operation is not performed, the copy app **413** determines whether or not the press of the cancellation button **1152** is detected (S**215**). In a case where the cancellation button **1152** is not pressed, the copy app **413** returns the processing to S**210**.

In a case where the cancellation button **1152** is pressed, the copy app **413** cancels the job corresponding to the selected item among the jobs displayed in the copy job list **1151** (S**216**). Specifically, the job processing unit **402** is instructed to specify the job ID of the selected job to cancel. The job processing unit **402** cancels the copy job having the job ID instructed from the copy app **413**.

Next, the copy app **413** updates the display on the copy job cancellation screen **1150** (SS**217**). The copy app **413** obtains the status of the copy job from the job processing unit **402** and updates the job list displayed on the display **122**.

Next, the copy app **413** determines whether or not the copy job is remaining in the job list as a result of the update in S**215** (S**218**). When the copy job is remaining, the copy app **413** returns the processing to S**209**. When the copy job is not retaining, the copy app **413** shifts the processing to S**212**.

Next, in a case where the stop key is not pressed, the copy app **413** calls out the main menu app **411**. The main menu app **411** displays the main menu screen in accordance with the instruction from the copy app **413**.

In a case where the stop key **306** is pressed on the copy screen **1101** from S**207** of FIG. **9**A, the job processing unit **402** stops only the copy job. Therefore, the print job for printing the image data received from the PC is not suspended. For this reason, in a ease where the stop key **306** is pressed on the copy screen **1101** so that the user attempts to cancel the copy job, it is possible to avoid a situation where the print job that is not to be cancelled is suspended.

In the processing described in FIGS. **9**A and **9**B, the press of the status check/cancellation key **302** may be detected during the display of the copy screen **1101**, and the "status check/cancellation" screen **1301** may be displayed on the display **122**. With the above-described configuration, the user presses the status check/cancellation key **302** during the display of the copy screen **1101** and displays the "status check/cancellation" screen **1301** on the display **122** so that the job other than the copy job can be cancelled.

Next, an operation of the image processing apparatus **100** when the "scan and send" key **1003** is selected on the main menu screen will be described with reference to FIGS. **12**A and **12**B and FIGS. **13**A and **13**B. FIGS. **12**A and **12**B illustrate processing executed by the transmission/FAX app **414** when the user performs the tap operation on the "scan and send" key **1003** on the main menu. The program for executing the processing described in this flow chart is stored in the ROM **113** or the external memory **123**, and the processing is realized when the above-described program developed into the RAM **112** is executed.

The transmission/FAX app **414** receives the notification from the main menu app **411** in S**105** of FIG. **6** and displays the transmission/FAX app screen on the display **122** (S**301**). FIG. **13**A illustrates an example of a "scan and send" screen **1201** displayed on the display **122** in S**301**.

As illustrated in FIG. **13**A, buttons **1203** to **1207** for setting a transmission/FAX destination are arranged on the "scan and send" screen **1201**. Among the buttons **1203** to **1207**, the address book button **1203** is used for calling out an address book such that the user can select the destination from the address book. The one-touch button **1204** is used such that the user can select the destination from a list of destinations registered as a one-touch destination. The new address input button **1205** is used such that the user can newly input a destination such as a FAX telephone number or a mail address. The transmission/FAX destination input b the user using the address book button **1203**, the one-touch button **1204**, and the mw address input button **1205** is displayed in the transmission destination list **1202**. When the user presses the deletion button **1206**, the selected destination among the destinations displayed in the transmission destination list **1202** is deleted. When the user presses an all delete button **1207**, all the destinations displayed in the transmission destination list **1202** are deleted.

Setting change buttons **1208** to **1211** for changing, the transmission setting of the transmission/FAX are arranged on the "scan and send" screen **1201**. Among the buttons **1208** to **1211**, the color selection button **1208** is used for setting a color mode. The resolution selection button **1209** is used for setting a resolution. The duplex button **1210** is used for setting a duplex or double-sided original. The other function button **1211** is used for performing a setting other than the above-described settings.

Next, the transmission/FAX app **414** determines whether or not the user performs the tap operation on the destination setting buttons **1203** to **1207** for the copy setting change or the transmission setting change buttons **1208** to **1211** (S**302**). In a case where the tap operation on the destination setting buttons **1203** to **1207** or the transmission setting change buttons **1208** to **1211** is performed, the transmission/FAX app **414** performs the setting of the transmission destination car the change of the transmission setting in accordance with the button where the tap operation is performed (S**303**). For example, when the button where the tap operation is performed in S**302** is the address book button **1203**, the transmission/FAX app **414** opens an address book screen (not illustrated) and accepts the destination selection from the address book. When the button where the tap operation is performed in S**302** is the color selection button **1208**, the screen for setting the color mode is displayed in the display **122**, and the color mode is set in accordance with the operation of the user. The same also applies to the case where the tap operation on the other destination setting buttons **1203** to **1207** and the setting change buttons **1208** to **1211** is performed. In a case where the numeric key **303** or the reset key **304** is pressed, the transmission/FAX app **414** may also execute the processing in S**304**. For example, in a case where the numeric key **303** is pressed, the transmission/FAX app **414** sets a FAX number at the transmission destination in accordance with the pressed key. As an alternative to the above-described configuration, in a case where the reset key **304** is pressed, the transmission/FAX app **414** discards the destination and the setting value which have been set thus far and sets the initial value stored in the ROM **113**. After the end of this step, the processing returns to step S**302**.

Next, in a case where the tap operation on the setting change button is not performed, the transmission/FAX app **414** determines whether or not the start key is pressed (S**304**). In a case where the start key is pressed, the transmission/FAX app **414** instructs the job processing unit **402** to start the transmission job on the basis of the set transmission destination and the transmission setting (S**305**). When the start of the transmission job is instructed, the job processing unit **402** generates a new job and holds information thereof in the RAM **112**. The transmission job includes information indicating a "status" of the job. The "status" of the transmission job includes "standby", "being scanned", and "being transmitted". The status of the transmission job immediately after the generation is "standby". In a case where the scanner **125** can be used since the scanner is not used for the other job, the job processing unit **402** changes the job status to "being scanned" and reads the original from the scanner **125**. In a case here the image read from the scanner **125** exists and the transmission by the communication processing unit **401** can be performed, the job processing unit **402** changes the job status into "being transmitted" and transmits the image through the communication processing unit **401**. The operation of the job processing unit **402** is independent from the flow of the transmission/FAX app illustrated in FIGS. **12**A and **12**B and is processed in parallel. That is, the transmission/FAX app **414** returns the processing to S**302** without waiting for the end of the transmission job generated in S**305**.

In a case where the stop key is not pressed, the transmission/FAX app **414** determines whether or not the stop key **306** is pressed (S**306**). In a case where the stop key **306** is pressed, the transmission/FAX app **414** determines whether or not the scanner **125** currently operates. In a case where the scanner **125** currently operates, the transmission/FAX app **414** suspends the operation of the scanner. Then, the transmission/FAX app **414** obtains the list of the transmission jobs from the job processing unit **402** (S**307**). FIG. **11**B illustrates an example of the list of the transmission jobs obtained from the transmission/FAX app **414**. In the example of FIG. **11**B, the list of the transmission jobs includes information of two jobs. The information of the respective jobs is constituted by the ID for uniquely identifying the job, the job accepted time, the destination, and the information about the job status. As will be different from the case of copying, the transmission job is not to be suspended. For this reason, the respective jobs in the job list obtained in this step are not also in the suspended state. The information included in the job list is not limited to the information described in FIG. **11**B. For example, a setting value (such as the color mode or resolution) of the job may be included in the job list.

Next, the transmission/FAX app **414** displays a transmission job cancellation screen on the basis of the job list obtained in S**306** (S**308**). FIG. **13**B illustrates an example of the transmission job cancellation screen. As illustrated in FIG. **13**B, a transmission job cancellation screen **1250** is displayed while being overlapped with the "scan and send" screen **1201**. A transmission job list **1251**, a "cancellation" button **1252**, and a "dose" button **1253** are arranged on the transmission job cancellation screen **1250**. Pieces of the information of the respective jobs are displayed in the transmission job list **1251** on the basis of the job information obtained in step S**306** described above. According to the present exemplary embodiment, the job accepted time, the destination, and the job status are displayed as the information of the respective jobs. One of the displayed jobs can be selected in the transmission job list **1251**. In FIG. **13**B, the

selected job is represented by way of hatching. In an initial state immediately after the transmission job cancellation screen **1250** is displayed, the initial item in the job list is set in the selected state. That is, the job having the earliest time when the job execution starting instruction has been performed is set in the selected state. As described in S**307** and S**308**, in a case where the stop key **30** is pressed during the reading of the original, the transmission/FAX app **414** suspends the original reading operation by the scanner **125**. Then, a screen for displaying a list of the transmission jobs is displayed. After the user closes the screen for selecting the cancellation job, the transmission/FAX app **414** resumes the original reading and executes the transmission job. With the above-described configuration, the user presses the stop key, and it is possible to immediately select the transmission job to be cancelled.

Next, the transmission/FAX app **414** accepts the operation of the user and determines whether or not the accepted operation is the tap operation on the "close" button **1253** (S**309**). In a case where the tap operation on the close button is detected, the transmission/FAX app **414** ends the display of the transmission job cancellation screen **1250**. Thereafter, the transmission/FAX app **414** returns the processing to step S**302** described above.

In a case where the tap operation on the dose button is not performed, the transmission/FAX app **414** determines whether or not the tap operation on the "cancellation" button **1252** is performed (S**311**). The transmission/FAX app **414** instructs the job processing unit **402** to cancel the job corresponding to the selected item among the job displayed in the transmission job list **1251** (S**312**). The job processing unit **402** cancels the job having the job ID instructed from the transmission/FAX app **414**.

Next, the transmission/FAX app **414** updates the display of the transmission job cancellation screen **1250** (S**313**). Specifically, the transmission/FAX app **414** obtains the status of the transmission job from the job processing unit **402** to be reflected on the display.

Next, the transmission/FAX app **414** determines whether or not the transmission job is remaining in the job list as a result of the update in S**313** (S**314**). When the transmission job is remaining in the job list, the transmission/FAX app **414** returns the processing to step S**308**. When the transmission job is not remaining in the job list, the transmission/FAX app **414** shifts the processing to step S**310**.

In a case where the tap operation on the cancellation button is not detected the transmission/FAX app **414** determines whether or not the job displayed in the transmission job list **1251** is selected (S**315**). The transmission/FAX app **414** displays the selected job in the transmission job list **1251** by way of hatching to be set in the selected state (S**316**). The transmission/FAX app **414** also cancels the hatching display of the item that has not been selected to cancel the selected state. After this step, the transmission/FAX app **414** returns the processing to step S**309** described above.

In a case where the stop key **306** is not pressed, the transmission/FAX app **414** determines whether or not the main menu key **301** is pressed (S**317**). In a case where the main menu key **301** is not pressed, the transmission/FAX app **414** returns the processing to S**302**. In a case where the main menu key **301** is pressed, the transmission/FAX app **414** calls out the main menu app **411** (S**318**). The main menu app **411** displays the "main menu" screen **1001** on the display **122** in accordance with the instruction from the transmission/FAX app **114**. Then, the transmission/FAX app **414** ends the processing described in this flow chart.

When the above-described processing is executed, the image processing apparatus **100** displays only the transmission job as the job set as the cancellation target when the stop key **306** is pressed during the display of the "scan and send" screen **1201**. With the above-described configuration, the user can promptly select the job cancelled from the transmission jobs.

In FIGS. **12**A and **12**B, in a case where the status check/cancellation key **302** is pressed on the "scan and send" screen **1201**, the "status check/cancellation" screen **1301** may be displayed. With the above-described configuration, it is possible to display the screen where the status of the job having the other job type can be immediately checked from the "scan and send" screen **1201**. The user operates a "cancel" button **1307** on the "status check/cancellation" screen **1301** or the stop key **306** on the "status check cancellation" screen **1301** so that it is possible to cancel the job other than the transmission job.

In S**108** in the flow chart of FIG. **6**, the box app **415** displays the setting screen on the display **122** and shifts the processing to the box app **415**. Since the operation at the time of the press of the stop key in the box app **415** is similar to the copying, a description thereof will be omitted.

Next, the operation of the image processing apparatus **100** when the user presses the status check/cancellation key on the main menu screen will be described with reference to FIG. **14**A**1**, FIG. **14**A**2**, FIG. **14**B, FIG. **15**A, and FIG. **15**B. FIG. **14**A**1**, FIG. **14**A**2**, and FIG. **14**B illustrate processing executed by the status check/cancellation app **412** when the user presses the status check/cancellation key in the main menu. The program for executing the processing described in this flow chart is stored in the ROM **113** or the external memory **123**, and the processing is realized when the above-described program developed into the RAM **112** is executed.

The status check/cancellation app **412** receives the notification from the main menu app **411** in S**110** of FIG. **6** and displays the "status check/cancellation" screen on the display **122** (S**401**). FIG. **15**A illustrates an example of the "status check/cancellation" screen **1201** displayed on the display **122** in S**401**. As illustrated in FIG. **15**A, the following graphical user interface (GUI) parts are arranged on the "status check/cancellation" screen **1301**. A "job status" button **1302** is a button for setting contents to be displayed in a job list **1305** in the currently executed job list. A "job history" button **1303** is a button for setting the contents to be displayed in the job list **1305** in an ended job list (execution history of the jobs). The "job status" button **1302** and the "job history" button **1303** act exclusively. FIG. **15**A illustrates a state in which the "job status" button **1302** is pressed by way of hatching. At this time, the currently executed job status is displayed in the job list **130**. That is, the execution history of the jobs is not displayed on the display **122**.

A job type selection button **1304** is a button for selecting a job type of the job to be displayed in the job list **1305**. The job type selection button **1304** is so-called a drop-down list or a pull-down list. When the job type selection button **1304** a pressed, a list of job types is displayed. When a selection is made from the displayed list, the user can select the job type to be displayed in the job list **1305**. The job types displayed in the list when the job type selection button **1304** is pressed include "print", "copy", "transmission", "FAX transmission", "reception", and "saving". In the example of FIG. **15**A, "print" is selected. FIG. **16** illustrates a correspondence relationship between the respective items of the job type selection buttons and the job type displayed in the job list **1305** when the item is selected.

Among the job types illustrated in the respective columns of FIG. **16**, "copy" is a job that is input from the copy app **413** for printing the image read by the scanner **125** by using the printer **124**. "Print" is a job for printing the Image received from the PC **201** or the like via the network **203** by using the printer **124**. "FAX transmission" is a job that is input from the transmission/FAX app **414** for transmitting the image read by the scanner **125** to the FAX **204**. "FAX reception" is a job for printing the image received from the FAX **204** by using the printer **124**. "E-mail transmission" is a job that is input from the transmission/FAX app **414** for transmitting the image read by the scanner **125** via the network **203** to the PC **201** or the like by way of E-mail. "Box saving" is a job for saving the image input from the box app **415** and read by the scanner **125** in the external memory **123** or the NAS **202**. "Box print" is a job for printing the image input From the box app **415** and saved in the external memory **123** or the NAS **202** by the printer **124**. "Report print" is a job for printing the apparatus status of the image processing apparatus **100** or the respective job execution statuses by using the printer **124**. For example, in a case where "print" is selected on the job type selection button **1304**, a list of the jobs "copy", "print", "FAX reception", "box print", and "report print" where the row of "print" in the table illustrated in FIG. **16** is selected is displayed.

A list of the statuses of the currently executed jobs and the execution histories of the ended jobs is displayed in the job list **1305** in accordance with the pressed states of the "job status" button **1302** and the "job history" button **1303** and the selected state of the job type selection button **1304**. The information for the display is obtained from the job processing unit **402**. Each of the rows in the list indicates a single job. The display contents of the respective rows in the list vary depending whether the job execution status is displayed or the job execution history is displayed. Furthermore, the display contents also vary depending an the job type selected by the job type selection button **1304**. In the example of FIG. **15**A, the job status of the print job is displayed and a time, a job name, a name of the user who inputs the job, a job status, and a waiting time are displayed in the respective roes in job **1305**. The respective rows in the job list **1305** can be selected. When the user presses one row in the list, the pressed row is put into the selected state. The selected states in the respective rows are exclusive to each other. When the user selects one row, the selected state or the other row is cancelled.

An "interruption/priority print" button **1306** is a button for setting a priority of the job in the selected state in the job list **1305**. The "cancel" button **1307** is a button for cancelling the job in the selected state in the job list **1305**. A "suspend all print jobs" button **1308** is a button far suspending all the print jobs. A "close" button **1309** is a button for closing the "status check/cancellation" screen **1301**.

Next, the status check/cancellation app **412** determines whether or not the tap operation on the "job status" button **1302** is performed (S**402**). In a case where the tap operation on the "job status" button **1302** is performed, the status check/cancellation app **412** obtains the currently executed job list of the job type selected by the job type selection button **1304** from the job processing unit **402** (S**403**). FIG. **11**C illustrates an example of the currently executed job list obtained by the status check/cancellation app **412**. FIG. **11**C illustrates the example in a case where the job type is the print job. In the example of FIG. **11**C, the print job list includes information of three jobs. The information of the respective jobs is constituted by information including the ID for uniquely identifying the job, the job name, the job accepted time, the user name who has input the job, the number of pages, the number of copies, the job status, and an estimated waiting time until the job ends. According to the present exemplary embodiment, the copy job is also treated as one type of the print job. In the case of the copy job, the job name is set as "copy". On the other hand, in a case where the print job is input from the PC **201** or the like via the network, a job name (typically, a file name) assigned to the job is used.

Next, the status check/cancellation app **412** reflects the contents of the currently executed job list obtained in S**404** onto the display of the job list **1305** and displays the job list (S**404**).

Then, the status check/cancellation app **412** updates the display statuses of the buttons **1306** to **1308** (S**405**). In a case where the job type selected by the job type selection button is the print job or the copy job, the status check/cancellation app **412** displays the "interruption/priority print" button **1306** and the button **1308**. In a case where the job type selected by the job type selection button is not the print job or the copy job, the status check/cancellation app **412** sets the "interruption/priority print" button **1306** and the button **1308** in a non-display state. Furthermore, when the currently executed job list obtained in S**404** includes at least one job, the status check/cancellation app **412** sets the "interruption/priority print" button **1306** and the "cancel" button **1307** in a state in which the button can be pressed. When the currently executed job list obtained in S**404** does not include a job, the status check/cancellation app **412** sets the "interruption/priority print" button **1306** and the "cancel" button **1307** in a state in which the press is not permitted. The state in which the press is not permitted refers, for example, to a state in which graying-out display is performed, and even when the user performs the tap operation on the "interruption/priority print" button **1306** and the "cancel" button **1307**, the processing is not executed. The status check/cancellation app **412** determines whether or not all the print jobs are currently suspended in the job processing unit **402**. In a case where all the print jobs are suspended, the status check/cancellation app **412** sets a button notation of the "suspend all print jobs" button **1308** as "resume all print jobs". In a case where all the print jobs are not suspended, the status check/cancellation app **412** sets the button notation of the "suspend all print jobs" button **1308** as "suspend all print jobs". After S**405**, the status check/cancellation app **412** returns the processing to step S**402** described above.

In a case where the tap operation on the "job status" button **1302** is not performed, the status check/cancellation app **412** determines whether or not the tap operation on the "job history" button **1303** is performed (S**406**). In a case where the tap operation on the "job history" button **1303** is performed, the status check/cancellation app **412** obtains a job history list of the job type selected by the job type selection button **1304** from the job processing unit **402** (S**407**).

Next, the status check/cancellation app **412** reflects the contents of the jot history list obtained in S**407** onto the display of the job list **1305** (S**408**). Then, the status check cancellation app **412** puts the "interruption priority print" button **1306**, the "cancel" button **1307**, and the "suspend all print jobs" button **1308** into a non-display state (S**409**). After S**406**, the status check/cancellation app **412** returns the processing to S**402**.

In a case where the job history is not selected, the status check/cancellation app **412** determines whether or not the job type to be displayed is selected by the job type selection button **1304** (S**410**). In a case where the job type is selected,

the status check/cancellation app **412** obtains the currently executed job list corresponding to the selected job type or the job history list from the job processing unit **402** (S**411**). Then, the status check/cancellation app **412** displays the obtained job list in the job list **1305** (S**412**). Then, the status check/cancellation app **412** executes the processing similar to S**405** or S**409** in accordance with the selected button among the "job status" button **1302** and the "job history" button **1303** (S**413**). Thereafter, the status check/cancellation app **412** returns the processing to S**402**.

In a case where the tap operation on the job type selection button is not performed, the status check/cancellation app **412** determines whether or not the user selects the job (S**414**). In a case where the job is selected, the status check/cancellation app **412** performs the hatching display of the row where the press by the user is detected among the items (rows) displayed in the job list **1305** to be put into the selected state (S**415**). The status check/cancellation app **412** puts the other item (row) into the non-selected state without performing the hatching display. After step S**413**, the status check/cancellation app **412** returns the processing to step S**402** described above.

In a case where the job is not selected, the status check/cancellation app **412** determines whether or not the tap operation on the "interruption priority print" button **1306** is performed (S**416**). In a case where the tap operation on the "interruption/priority print" button **1306** is performed, the status check/cancellation app **412** instructs the job processing unit **402** to change the priority of the selected job in the job list (S**417**). With this configuration, the job processing unit **402** causes the selected job to be executed ahead of the other job or to interrupt the currently executed other job to be executed on the basis of the instruction of the status check/cancellation app **412**. A detail of the processing in S**417** will be omitted. After the processing described in S**417** is executed, the status check/cancellation app **412** returns the processing to S**402**.

In a case where the tap operation on the "interruption priority print" button **1306** is not performed, the status check/cancellation app **412** determines whether or not the tap operation on the "cancel" button **1307** is performed (S**418**). In a case where the tap operation on the "cancel" button **1307** is performed, a screen for confirming whether or not the selected job is to be cancelled is displayed on the display **122** (S**419**). FIG. **15**B illustrates an example of the job cancellation confirmation screen. As illustrated in FIG. **15**B, the cancellation confirmation screen **1350** is displayed while being overlapped with the "status check/cancellation" screen **1301**. The "yes" button **1351** and the "no" button **1352** are arranged on the cancellation confirmation screen **1350**. The "yes" button **1351** is a button for cancelling the currently selected job. The "no" button **1352** is a button for ending the job cancellation confirmation screen to be returned to the "status check/cancellation" screen **1301**.

Next, the status check/cancellation app **412** determines whether or not the tap operation on the "no" button **1352** is performed (S**420**). In a case where the tap operation on the "no" button **1352** is performed, the status check/cancellation app **412** executes processing which will be described later in S**423**. In a case where the tap operation on the "no" button **1352** is not performed, the status check/cancellation app **412** determines whether or not the tap operation on the "yes" button **1351** is performed (S**421**). In S**421**, in a case where the tap operation on the "yes" button **1351** is not performed, the status check/cancellation app **412** returns the processing to S**420**. In a case where the tap operation on the "yes" button **1351** is performed, the status check/cancellation app **412** instructs the job processing unit **402** to cancel the job selected from the job list. The job processing unit **402** cancels the job in accordance with the instruction from the status check/cancellation app **412**. After S**418**, the status check/cancellation app **412** closes the cancellation confirmation screen **1350** (S**423**). After the processing in step S**419**, the status check cancellation app **412** returns the process to S**402**.

In a case where the tap operation on the "cancel" button **1307** is not performed the status check/cancellation app **412** determines whether or not the tap operation on the "suspend all print jobs" button **1308** is performed (S**424**). In a case where the tap operation on the "suspend all print jobs" button **1308** is performed, the status check/cancellation app **412** determines whether or not the statuses of all the print jobs are suspended in the job processing unit **402** (S**425**). In a case where the statuses of all the print jobs are not suspended, the status check/cancellation app **412** instructs the job processing unit **402** to suspend all the print jobs (S**426**). The job processing unit **402** suspends the statuses of all the print jobs in accordance with the instruction from the status check/cancellation app **412**. The status check/cancellation app **412** also holds information indicating that all the print jobs are currently suspended in the RAM **112** as a flag. After S**426**, the status check/cancellation app **412** returns the processing to S**402**.

In a case where the statuses of all the print jobs are suspended, the status check/cancellation app **412** instructs the job processing unit **402** to cancel the suspension of all the print jobs (S**427**). The status check/cancellation app **412** also cancels the flag indicating that all the print jobs held in the RAM **112** are suspended. After S**422**, the status check/cancellation app **412** returns the processing to S**402**.

In a case where the tap operation on the "suspend all print jobs" button **1308** is not performed, the status check/cancellation app **412** determines whether or not the stop key **306** is pressed (S**428**). In a case where the stop key **306** is pressed, the status check/cancellation app **412** executes the job cancellation processing described in FIG. **7**A, FIG. **7**B, and FIG. **7**C (S**112**). In a case where the stop key is pressed on the main menu screen, the main menu app **411** executes the processing described in FIG. **7**A, FIG. **7**B, and FIG. **7**C, but herein, the status check/cancellation app **412** executes the processing described in FIG. **7**A, FIG. **7**B, and FIG. **7**C. In a case where the stop key **306** is pressed on the "status check/cancellation" screen **1301**, the cancellation screen for selecting the job to be cancelled from the transmission job list is displayed on the display **122** similarly as in the main menu screen. In this manner, in a case where the stop key is pressed on the "status check cancellation" screen **1301**, the transmission job that is not to be suspended is displayed by priority over the transmission job that can be suspended. With the above-described configuration, the user can restrain the operation related to the cancellation of the transmission job that is not to be suspended.

In a case where the stop key is not pressed, the status check/cancellation app **412** determines whether or not the job is completed (S**429**). During the display of the "status check/cancellation" screen **1301**, the job execution continues unless the user instructs to stop all the print jobs. For this reason, the execution of the job may end in some cases during the display of the "status check/cancellation" screen **1301**. In a case where the status check/cancellation app **412** receives the job execution completion notification from the job processing unit **402** and determines that the job is completed.

In a case where the job is completed, the status check/cancellation app **412** updates the display contents of the job list **1305** from the job processing unit **402** (S**430**). It should be noted that, in a case where the display item selected before the update is also displayed in the job list **1305** after the update, the status check/cancellation app **412** displays the job list in a state in which this item is selected on the display **122**.

Next, the status check/cancellation app **412** updates the display statuses of the respective buttons in conformity to the list after the update (S**431**). The processing contents of this step are equivalent to step S**413**. After this step, the status check/cancellation app **412** returns the processing to step S**402** described above.

In a case where the completion notification of the job is not received, the status check/cancellation app **412** determines whether or not the tap operation on the "close" button **1309** is performed (S**432**). In a case where the tap operation on the "close" button **1309** is performed, the status check/cancellation app **412** ends the display of the "status check/cancellation" screen **1301** (S**433**). After this step, the status check/cancellation app **412** ends the processing in this flow chart. In a case where the tap operation on the "close" button **1309** is not performed, the status check/cancellation app **412** returns the processing to S**402**.

It should be noted that, with regard to the print job suspended in S**2003**, when the "job cancellation" screen **1401** is displayed, the suspension of the print job is cancelled in step S**2213** when the "job cancellation" screen **1401** is closed. On the other hand, in a case where the print job is suspended by the press of the "suspend all print jobs" button **308**, the resumption is not performed when the "job cancellation" screen **1401** is closed. With the above-described configuration, the failure of the resumption of the print job when the "job cancellation" screen **1401** is closed can be avoided, and the resumption of the job which is unintended by the user can also be avoided.

As described above, according to the present exemplary embodiment, when the user presses the stop key **306** during the display of the copy screen **1101**, the job cancellation screen (**1150**) in accordance with the job input in the copy app is displayed. Similarly, when the user presses the stop key **306** during the display of the screen (**1201**) of the transmission/FAX app **414**, the job cancellation screen (**1250**) in accordance with the job input in the transmission/FAX app is displayed. That is, the cancellation screen dedicatedly used for the job input in each of the apps is displayed. A typical case where the job is cancelled includes a case where a mistake is noticed immediately after the job is input and the like. In the above-described case, since only the jobs input in the app are displayed, it becomes easier to select the cancellation target job, and an advantage is attained that the desired job can be promptly cancelled.

Furthermore, the transmission job list where the job is not suspended is displayed by priority over the print job list on the basis of a state in which the stop key is pressed on the "main menu" screen **1001** or the "status check/cancellation" screen **1301** which is different from the job setting screen. With the above-described configuration, it becomes easier to cancel the job that is not to be suspended by the user.

In addition, according to the present exemplary embodiment, it is possible to cancel the currently selected job when the "cancel" button **1307** arranged on the "status check/cancellation" screen **1301** is pressed. On the other hand, when the user presses the stop key **306** during the display of the "status check/cancellation" screen **1301**, the "job cancellation" screen **1401** is displayed. While the screen is newly opened, the user who does not notice the presence of the "cancel" button **1307** can also cancel the job. On the other hand, the user who notices the "cancel" button **1307** can cancel the job by saving time and effort.

Other Exemplary Embodiments

As described above, the stop key **306** may be realized as a hard key or a soft key. When the stop key **306** is realized as the soft key, the stop, key is displayed at the same position on the display **122** with the same shape irrespective of the screen (**1001**, **1101**, or the like) of the app to be displayed. With this configuration, even in a case where the user desires to promptly cancel the job, it becomes easier for the user to search for the stop key without hesitation.

In addition, when the stop key is displayed by using the soft key, the shape, the color, or the like may be changed in accordance with the job type set as the cancellation target, or the job type that can be cancelled may be displayed on the stop key. With this configuration, it is possible to clearly inform the user of the job set as the cancellation target.

According to the present exemplary embodiment, the descriptions have been made while the processing when the stop key is pressed is executed by the respective applications. An application dedicated to the stop key may be arranged, and in accordance with the screen displayed when the stop key pressed, the application dedicated to the stop key may switch the type of the job displayed on the cancellation screen. For example, the cancellation list of only the copy job is displayed in advance at the time of the display of the "copy screen" **1101**, and the cancellation screen where the jobs of all types can be cancelled is displayed at the time of the display of the "main menu" screen **1001**. The image processing apparatus **100** stores the type of the screen and the type of the job to be displayed in the ROM **113** while being associated with each other. The stop key app detects the press of the stop key and discriminates the type of the screen displayed at that time on the display **122**. The stop key app reads out the job type associated with the discriminated type of the screen from the ROM **113**. Then, the stop key app may obtain the job list of the job type read out from the ROM **113** from the job processing unit **402** and display the job list on the display.

As described above, in a case where the stop key is pressed during the display of the screen for setting the setting value of the job, the image processing apparatus displays the screen where only the job of the job type in which the setting value can be set on the above-described screen is set as the cancellation target. On the other hand, in a case where the stop key is pressed on a certain screen different from the screen for setting the setting value of the job, the image processing apparatus displays the list of the transmission jobs. With the above-described configuration, in a case where the stop key is pressed on the certain screen different from the job setting screen it is possible to display the screen where the transmission job that is not to be suspended can be promptly cancelled.

The user may press the stop key in a state in which the main menu screen, which is to be displayed while the image processing apparatus stands by or immediately after the login processing, is displayed in some cases. For example, the above-described case includes a case where the user presses the start key to start the job and then temporarily leaves a place in front of the image processing apparatus and the like. In order for the user to cancel the job, when the user comes back to the place in front of the image processing apparatus, the main menu screen is displayed on the display.

Embodiment(s) can also be realized by a computer of a system or apparatus that reads out and executes computer executable instructions (e.g. one or more programs) recorded on a storage medium (which may also be referred to more fully, as a 'non-transitory computer-readable storage medium') to perform the functions of one at more of the above-described embodiment(s) and/or that includes one or more circuits (e.g., application specific integrated circuit (ASIC)) for performing the functions of one or more of the above-described embodiment(s), and by a method performed by the computer of the system or apparatus by, for example, reading out and executing the computer executable instructions from the storage medium to perform the functions of one or more of the above-described embodiment(s) and/or controlling the one or circuits to perform the functions of one or more of the above-described embodiment(s). The computer may comprise one or chore processors (e.g., central processing unit (CPU), micro processing unit (MPU)) and may include a network of separate computers or separate processors to read out and execute the computer executable instructions. The computer executable instructions may be provided to the computer, for example, from a network or the storage medium. The storage medium may include, for example, one or more of a hard disk, a random-access memory (RAM), a read only memory (ROM), a storage of distributed computing, systems, an optical disk (such as a compact disc (CD), digital versatile disc (DVD), or Blu-ray Disc (BD)™), a flash memory device, a memory card, and the like.

While the present disclosure has been described with reference to exemplary embodiments, it is to be understood that the disclosure is not limited to the disclosed exemplary embodiments. The scope of the following claims is to be accorded the broadest interpretation so as to encompass all such modifications and equivalent structures and functions.

This application claims the benefit of Japanese Patent Application No. 2017-254233 filed Dec. 28, 2017, which is hereby incorporated by reference herein in its entirety.

What is claimed is:

1. An image processing apparatus comprising:

a scanner configured to read an original;

a transmission interface configured to transmit image data to an external apparatus;

a printer configured to print an image;

a display configured to display the image;

one or more memories configured to store at least one transmission job for the transmission interface to transmit the image data generated when the scanner reads the original and a print job to be executed by the printer, the one or more memories further storing a set of instructions; and

one or more processors that execute the instructions causing the image processing apparatus to perform operations comprising:

causing the display to display a transmission job list of the at least one transmission job having a high priority in accordance with accepting of a selection of a key for suspending a job while the display is at least displaying a main menu screen for accepting a selection of at least a transmission function or a print function in a state in which the one or more memories store the transmission job and the print job;

causing the display to display a print job list of the print jobs in accordance with accepting a selection of the key while the display is at least displaying the main menu screen in a state in which the one or more memories do not store the transmission job but store the print job; and

cancelling a job which is instructed for cancellation by a user from the displayed job list.

2. The image processing apparatus according to claim **1**, wherein, execution of the stored instructions by the one or more processors further cause the image processing apparatus to perform operations comprising, in response to the selection of the key during display of a job setting screen, display, on the display, as the list, jobs of a type set on the displayed job setting screen.

3. The image processing apparatus according to claim **2**, wherein the job setting screen is a setting screen for a copy job for the printer to print the image by using the image data generated when the scanner reads the original.

4. The image processing apparatus according to claim **2**, wherein only the jobs of the type set on the job setting screen are suspended in response to the selection of the key during display of the job setting screen.

5. The image processing apparatus according to claim **1**, wherein execution of the stored instructions by the one or more processors further cause the image processing apparatus to perform operations comprising, executing the transmission of the image data without suspension in response to the selection of the key during display of the main menu screen.

6. The image processing apparatus according to claim **1**, further comprising:

a receiver configured to receive image data from the external apparatus, and

wherein execution of the stored instructions by the one or more processors further cause the image processing apparatus to perform operations comprising, suspending printing of the image data received by the receiver in response to the selection of the key during display of the main menu screen.

7. The image processing apparatus according to claim **1**, wherein, execution of the stored instructions by the one or more processors further cause the image processing apparatus to perform operations comprising, in response to a user instruction for ending display of the list of the transmission jobs or a list of print jobs, resuming execution of the suspended print job stopped.

8. The image processing apparatus according to claim **1**, wherein execution of the stored instructions by the one or more processors further cause the image processing apparatus to perform operations comprising, displaying the list of the transmission jobs and a list of print jobs in a switchable manner in response to the selection of the key during display of the main menu screen.

9. The image processing apparatus according to claim **1**, wherein execution of the stored instructions by the one or more processors further cause the image processing apparatus to perform operations comprising, causing the display to display the list of the transmission jobs as the list in response to the selection of the key during display of a screen illustrating a job execution status or a screen illustrating a job execution history.

10. The image processing apparatus according to claim **1**, wherein execution of the stored instructions by the one or more processors further cause the image processing apparatus to perform operations comprising, cause the display to display the list of the transmission jobs in response to the selection of the key during display of the setting screen for the transmission jobs.

11. The image processing apparatus according to claim 10, wherein, execution of the stored instructions by the one or more processors further cause the image processing apparatus to perform operations comprising, in response to the selection of the key during display of the setting screen for the transmission jobs, causing the display to display the list of the transmission jobs in a manner that switching to display of a list of print jobs is not accepted.

12. The image processing apparatus according to claim 1, wherein the display displays the list of transmission jobs and the list of print jobs in a switchable manner.

13. The image processing apparatus according to claim 1, wherein execution of the stored instructions by the one or more processors further cause the image processing apparatus to perform operations comprising, causing the display to display a screen for notifying a user that there is no job in accordance with acceptance of the selection of the key during display of the main menu screen in a case where the one or more memories store neither the transmission job nor the print job.

14. The image processing apparatus according to claim 1, wherein the transmission job list is a list displaying a job name of a job of which a type is a transmission job, the job name being obtained from the one or more memories.

15. The image processing apparatus according to claim 1, wherein the print job list is a list displaying a job name of a job of which a type is a print job, the job name being obtained from the one or more memories.

16. A control method for an image processing apparatus the includes a scanner configured to read an original, a transmission interface configured to transmit imager data to an external apparatus, a printer configured to print an image and a display configured to display the image, the control method comprising:

storing, in a memory, at least one transmission job for the transmission interface to transmit the image data generated when the scanner reads the original and a print job to be executed by the printer;

causing the display to display a transmission job list of the at least one transmission job having a high priority in accordance with accepting a selection of a key for suspending a job while the display is at least displaying a main menu screen for accepting a selection of at least a transmission function or a print function in a state in which the one or more memories store the transmission job and the print job;

causing the display to display a print job list of the print job in accordance with accepting a selection of the key while the display is at least displaying the main menu screen in a state in which the one or more memories do not store the transmission job but store the print job; and

cancelling a job which is instructed for cancellation by a user from the displayed job list.

17. A non-transitory computer-readable storage medium that stores a computer program for causing a computer to execute the control method for the image processing apparatus according to claim 16.

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